

THE IMPACT OF MANAGING INNOVATION OVER TIME ON THE INNOVATIONS OF
SUBCONTRACTORS

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EDWARD DRAKE

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THE IMPACT OF NUMBERED PREFERENCE CODES ON THE REACTIONS OF
SUBORDINATES

By

Dimitry Dierckx

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Chairman: Stephen M. McAllister
Major Department: Management

This study examines the impact of managers' involvement
upon an interviewee's ratings and job performance ratings
initiated through the reactions of subordinates. As part of
an interview validation study, simulated employment
interviews with 119 first-level managers were recorded on
videotape. Job performance ratings were gathered from
simulated supervisors and interviewee ratings were gathered
from Human Resource professionals within the firm. Visual
perceived cues were judged by trained student raters. Audit
perceived cues were objectively measured by finding the
public position of the interviewer along a competence value
continuum.

The resulting variables are "assessed" under consideration of manager's personality and referee's personal reactions toward the manager. These data were utilized in a laboratory study of lay student interns. Referees were exposed to only one channel of information from the manager, either the visual or the auditory channel. They made either attributions of the manager's personality based on Big Five dimensions or they gave their personal reactions to the manager. Personal reactions were based on 18 items asking such things as "How much do you trust you would like this manager?" and "How much would you trust this manager?"

Audio cues were significantly correlated with interview ratings, job performance ratings, personal, and extraversion attributions. Visual cues were significantly correlated with interview ratings, job performance ratings, extraversion attributions, conscientiousness attributions, and agreeableness attributions. Mediation paths caused personal reactions and conscientiousness attributions to be causal mediators in the model for visual cues and interview ratings. Personal reactions, extraversion attributions, and conscientiousness attributions were all mediators in the model for audio cues and interview ratings. Finally, personal reactions mediated the relationship between audio cues and job performance ratings.

The effects of all variables on the validity of the interview was examined also. Significant variance was accounted for by several cues, especially audio cues. An examination of whether usage of contextual cues, perceptibility attributions, and personal cues have an influence on interview validity and job performance criteria using a Bayesian Latent model showed high distinct usage between rating types.

CHAPTER 2 INTERVIEWING

What determines interview performance ratings? Does the provider each rating would like to think that the content of answers to interview questions determines the outcome of subsequent ratings. Dr. Li Shoukao, however, believes that interview scores cannot be separated by visual and auditory information, conversational cues.

Research on successful interview has found a significant male effect on interview ratings (e.g., Rummens, 1994). Often, researchers assume nonverbal behavior has a moderating effect on interview ratings. It has been shown that interviewees who are high users of nonverbal cues are favored (Jacob & Johnson, 1990). It has also been argued that when nonverbal cues used by interviewers are also correlated with job performance, those cues lengthen stay in the low score class (Rummens, 1994). Thus, nonverbal cues might enhance interview validity or they may be measures of error (Hannan & Reilly, 1994).

In an employment interview, the interviewer has access to information about past job behavior through the content of answers. The interviewer can also observe behaviors

Penalty marker used by the interviewer is an attempt to sway the interviewee's decision. One could argue that such impression management behaviors reflect the desire to land the job and do not reflect actual dimensions of job performance. The possibility exists the standards settings of interview performance. Another argument could be that interviewees are obtaining an immediate sense of the interviewer established by visual and vocal cues that may be valid. That is, the content of unspoken impression management behavior may not reflect future job performance, but the cues themselves may.

Valid predictions can be made from a combination of behavioral and nonbehavioral measures (Burke & Rosenstock, 1991). Furthermore, judgments based only on visual cues correlate substantially with the same judgments based on only visual cues in the interview (Rosenstock & Burke, 1990). Possibly, traits related to managerial effectiveness can be successfully detected through visual cues alone. In structured interviews, the interviewer is trained to ignore these cues because they are assumed to cause rating error. However, considering that the cues are present, they are probably being attended to and used in making ratings. For the job performance rater, there are no immediate conversational cues like in an interview, thus, any relationship between those cues and performance

ratings may actually indicate job validity.

This research examines the relationships between both types of supervisor cues, visual and audio, interview ratings and job performance ratings. A mediating model is offered with causal variables that may explain the relationships between supervisor cues and both types of ratings. Then, interview validity is measured after partitioning out the variance due supervisor cues. Finally, a Structural Model is used to assess the degree to which interview ratings and job performance ratings similarly are受 supervisor cues, personality attributions, and personal reactions to maleability ratings.

CHAPTER 2 LITERATURE REVIEW

Research Model

This research examines effects of supervisor cues on interview ratings and ratings of job performance. However, research considers the effect of supervisor cues on interview ratings has not offered an empirical explanation for the relationship. Thus, this study attempts to discover why different cues are related to interview ratings, and even job performance ratings. In this end, Figure 2-1 shows the hypothesized mediating model that will be tested to explore the relationship between supervisor cues and performance ratings, with interview and job performance.

The variables are hypothesized to include the supervisor cue—interview rating, job performance rating, correlations at the top of the scale as "perceived reactions to cues," because reactions are the way a person effectively reacts toward a speaker. Interview and things as "how much do you think you would like this manager" and "how much would you trust this manager" reflect what is meant by perceptual



- Performance outcome of four types:
Job satisfaction and Job involvement

FIGURE 2-1
INFLUENCE OF PERSONAL VALUES
ON PERFORMANCE OUTCOME

relations. If when the effects of personal reactions are controlled, the relationship between normative cues and ratings drops, personal reactions to the speaker will be a partial explanation for the correlation between normative cues and ratings.

Stability. If the variance-free personality dimensions of the rater be partialled out, the correlation drops for cues and ratings. This variable will be a partial explanation. Personality attributions are assessments of personality traits made by a person about the speaker. In this case, attributions of *target's* personality traits are made by raters related to and like raters themselves. To describe the tests shown in the model, a review of the literature on each component follows.

Dependent Variables

In this study, two dependent variables are studied: interview ratings and job performance ratings. A review of the literature for each follows.

Interview Ratings

For years, researchers have tried to convince practitioners to rely less upon the interview as a sole selection device because the predictive validity is not as high as other predictions. Though skeptical in organizations, the evidence suggests that the effects of the "traditional选拔法" (past reliability and differential

validity due to idiosyncratic interview processes (Brett, 1990). However, recent research suggests that the interview may be more valid than previously believed (e.g., Wigand & Croton, 1988; Rausch, 1988). Specifically, the use of a job analysis to base structured interview questions has dramatically improved validity. Much work has focused on determining different types of structured interviews in attempts to increase predictive validity. What might be more important now is to assess the specific practices arrived in the structured interview that affect the determination of interview ratings and ultimately, predictive validity of job performance.

Unstructured Interviews

By their very nature, unstructured interviews are conducted in situations characterized by uncertainty and ambiguity (Heiner, Jelley, & Fenton, 1991). This type of interview works without a predetermined set of questions and usually without specific, behaviorally anchored rating scales. Interviewers ask what they feel are pertinent questions, thus giving the ability to make the best判断 from among the candidates. Obviously, a great amount of variance is inherent in this style. An attempt to research the unstructured study variables that may have moderating effects on unstructured interview validity.

Individual Differences

Compounding the problem of different variables for interview scores is the issue of interviewer individual differences. Two of the most valid factors to consider are the amount of training the interviewer could have had prior to the interview and the experience the interviewer has had. In general, more training and more experience will result in more valid interview scores. However, if the most valid interview format can be found and the best interviewers are selected, the possibility exists that training can prove to make them equally valid.

Some empirical research on the effectiveness of various interviewer training programs has occurred. Dougherty, Black, and Callahan (1991) provided strong support for the theory that more interviewers are more valid than others. They trained interviewers to elicit useful information and are fit to their interview situations. What they found were large increases in the validity of interview responses. Meador and Ray (1986) conducted an experiment where training included eight hours of general skill development, such as note taking and asking more like bias. However, they found no effect of the treatment on interviewer reliability. Conversely, Ray and Latane (1984) found training in content rating scores actually decreased them.

The role of demographic variables for predicting interview substance and interview ratings appears more modest and limited than commonly believed (see Cooper, 1995).

In a review of the literature, Arvey and F. Campion's review (1992), Morris (1991) summarized similar data in the field of race, age, and gender in interview settings. He concluded that recent research has found little relationship between demographic variables and hiring outcomes.

Campion and Arvey (1994) noted that fewer than 2% of participants in their videotaped practice interviews between 1979-1987 had anything to do with the selection interview. Nonetheless, how problems in employee selection are always a salient issue. They examined four areas that could be legally problematic in the interview: 1) postinterview determinants, or perceptions of applicants; 2) training and experience of interviewers; 3) prohibited interviewing behaviors; and 4) subjectivity in evaluation. Employers are urged to pay close attention to these specific areas to ensure legal defensibility of the interview process (Arvey, 1991).

Controversy lies, also, people attempt to confirm their hypotheses about phenomena. In a case of individual differences across interviewers and is always suspect in social psychology research. However, in studies in an interview context, little evidence is found of this potential problem (e.g., Bagby, 1982; McDonald & Bagby, 1984). It seems that interviewers have greater ability under a narrow set of conditions, unlike that of the interviewee.

method (Baron, 1991). Positive interviews do not necessarily depressions of applicants but they try to confuse throughout the interview. Perhaps it simply does not greatly affect final judgments.

Most of the literature has been examined as a possible moderator of interview settings (Kane, 1971). Kane predicted that interviews would assign higher ratings and check more favorable employment decisions about interviewees who in a positive rather than a negative mood (1971). His results confirmed this prediction and supported the previous findings that mood effects have significant effects upon memory (e.g., Baron et al., 1994).

Another possible effect on the validity of unstructured interviews comes from coaching the perceptions of what might be asked in unstructured interviews. This type of training notably occurs repeatedly in stages involving job interviews. Interviewers are provided with mainly desirable answers to say to the interviewee in an effort to see impressions integrated to find the job. Obviously, inappropriately influenced interview judges may have no connection with the interviewee's potential performance at all. For example, Bacca et al. (1990) did a study on impression management techniques used in interviews. They found that higher ratings would be given to an applicant who used multi-focused impression management techniques than to

an applicant who used either-focused tactics. Self-focused techniques resulted in significantly more job offers than the other-focused tactic. The researchers give up being the focus of attention and instead employ more subtle indicators of influence when using other-focused tactics (Homan et al., 1992). This study found when self-focused responses were used, the applicant received more job offers and fewer rejections than the group using the other-focused tactics.

More recent research provided robust evidence that these earlier findings on increased usage of impression management behaviors resulting in more job offers may generalize beyond the laboratory (Homan & Blalock, 1992). That is, the positive relationship between applicants' impression management tactics and their actual interview outcomes was confirmed in a field setting (Homan & Blalock, 1992). However, Homan (1992) found that there can be a "too much of a good thing" effect with impression management. One recent study, he found that impression management techniques worked to an extent, then began to have negative effects on ratings (Hanson, 1992).

To resolve this problem, a subgroup belief argues that employing combinations of questions might help to avoid social desirability responses. Homan and Homan (1992) examined effects of different interview questions on interviewing responses. As expected, they found that the

least amount of socially desirable responding occurred in computer administration. However, Lautenschlager and Flaherty (1990) found that computer administration led to increases in the impression management components of observed questionnaire scores. Clearly, removing the interviewer from the process does not seem to solve the problem of impression management oriented bias.

However, these findings make it important for the interviewer to be aware of the published guidelines. The interviewer may believe he or she is having the best qualified candidate, but is really selecting the less qualified by the application (Brennan et al., 1992). Managing the impressions of an experienced interviewer may be more difficult, but since all applicants considerably approach an unstructured interview in a similar manner (i.e., to manage impressions with a self-present), all interviewers expect the same type of behavior in the interviewee. This serves room for the well-published interviewer to sweep the interviewer with a modified approach to "passing over" the interviewer, despite that interviewer's experience.

Thus, the low validity and fairness found with the unstructured format should not be interpreted due to any or all of the above reasons. Based on results from their meta-analysis, Wissner and Crockett (1991) call for a reexamina-

in unstructured interview research has suggest that researchers should focus on structured interviews. That, many researchers have examined the effects of changing the format of the interview to a more structured approach in an effort to increase its validity.

Structured Interviews

There is support that structuring the interview schedule will decrease the report of the above described potential bias of the interviewee and reduce the validity of the interview (e.g., Capone, Powell, & Price, 1991; Jean, 1991; Lohman et al., 1996; Matsueda et al., 1992). However, to precisely specify what is a structured interview has caused this change in difficult. Structure is multidimensional and constitutes no certain blueprint (Capone, 1990). Typically, it involves the consistent application of predetermined rules. By applying these rules, the interviewer is relieved of having to decide what to ask while structuring questioning across all interviews. This forces the interviewer to ask the same questions, thus lowering cognitive demands on the interviewer (Krauer & Pug, 1988). Interestingly, the only drawback is the reduced discretionary control given to the interviewer that could disturb veteran interviewees who ask questions "off topic."

To differing degrees, the structured interview technique reduces the problems inherent in unstructured interviews. Yet it is the increased validity attributed to structured interviews that is of particular interest, though we do not know why structured interviews are more valid than unstructured interviews. Rapley and Gough (1982) discuss distinct features of structured interviews that serve as potential sources of predictive validity. First, one reason that structured interviews are predictive might be that they assess job-related aspects of applicant behavior (Rapley & Gough, 1982). By the extent that applicant statements of past behavior are honest and free from social desirability biases, the descriptions of behavior elicited from structured interviews reveal personal characteristics, thus permitting accurate judgment of the interviewee.

Another possible source for the validity of structured interviews is the situation the interviewer pays to diagnostic information about the applicant, allowing the interviewer to make judgments under underlying conditions more accurately (Rapley & Gough, 1982). Social situations provide aids yet another reason for reliance on structured interviews during the coding and retrieving of information and the tendency to filter information by the interviewer (Myer & Gray, 1984). With such specialized forms, resulting in an integral part of gathering information,

Note-taking has been shown to reduce error due to biases in the recall of information by the interviewer (Verbaas et al., 1972).

Another validity concern is the interviewee's tendency to rate in more structured and rating procedures, while unstructured interviews are subjectively rated, leading to best done or inherently difficult rating scales that describe past, average, and good performance (Bandy, 1989). Systematic job analysis enhances the validity of structured interview schedules (Krosnick, 1991), and is used in most structured interview forms presently available.

Furthermore, decomposing ratings procedures yield higher quality judgments than holistic judgments typically made in unstructured interviews (Gibbons & Rogers, 1976). Indeed, unstructured combinations of these decomposed ratings also yield validity for unstructured interviews (Hegelich, Parsons, & Rooney, 1999; Rausch, 1986). All factors seem to point toward a general theme of standardization. Still, it is important to acknowledge that standardization is rarely responsible for the success of unstructured interviews. Differences in some interview techniques may account for a large portion of the variance in predictive validity among alternative formats (Krosnick & Crockett, 1991).

Types of Structured Interviews

situational interview

The situational interview is based on a systematic job analysis known as the critical incident technique (Latham et al., 1980). When an incident is deemed critical to a specific job, a question is developed to find out how an applicant would behave in that situation. This format is a form of low-fidelity simulation (Binkowski, Bannister, & Carter, 1980; Binkowski & Rippin, 1980) because it presents job-like situations and asks applicants what they would do in those situations. The interview is moderated by a panel of two or more people. Questions are mixed with a roughly structured scoring guide.

Latham et al. (1980) try to argue that this type of interview is the only one grounded in theory, that being goal setting theory (Locke, 1980). The theory states that intentions are related to behavior. Latham et al. make the assumption that most interviewees say in an interview themselves directly to what they would do in the job. Behavioral Descriptive Interview (BDI).

The BDI follows the folk psychology phrase, "the best predictor of future behavior is past behavior." As a basis for the BDI, four key types of interview information are assumed to be present (Lam, 1999). These are verifiable descriptive statements, opinions, and intentions.

descriptions. The IPCC relies heavily on behavior descriptions because they cannot specifically observe the applicant node in the past. Guen et al., (1990) suggest that the use of behavior descriptions increases applicant ratings than resume performance and is the result of the high validity associated with the IPCC.

Similar to the situational interview, the PPI begins with a collection of critical incidents, using the incidents to narrow specific cues in the applicant's experience that are capable of eliciting behavior on the job (Guen, 1992). Interviewee consists of assembling questions to guide the interview through those specific incidents. A typical PPI question would ask, "When did you do XXXX?," to elicit specific behaviors to which the applicant has responded (Guen et al., 1990). The interviewer does not have to ask the same questions of everyone. For example, if an applicant has no relevant job experience, the pattern of questions would reflect job experience. From the applicant's past behavior, this pattern will lead predict future performance (Guen, 1992).

There has been some empirical support for the PPI; however, much more work has been a problem in all cases. Regardless, statistically significant validity coefficients have been around .40 in the few studies done. Guen (1990) reported predictive validities of .41 and .43 for the IPCC

versus .87 and .85 for the unstructured interview. A major problem with this format is the lack of a rating guide. Also, many behaviors can occur, all of which would have to be rated and for direct comparison to other formats.

Computerized structured interview results

Proposed by Conger, Purcell, and Brown (1988), this technique is highly structured. It is constructed by following these six steps: develop questions based on job analysis, pose these questions to all candidates for employment, assign the rating guides for scoring the answers, use an interview panel to rate answers, consistently administer the process, and give specific attention to job relationships, behaviors, and consequences in accordance with leading guidelines. In effect, this approach combines all characteristics from both the unstructured interview and the ROC.

Following these development procedures, Conger, Purcell and Brown (1988) built a 20-item interview. In their study of it, this interview had an internal consistency reliability of .78. Their reported validity coefficient between the interview and performance appraisals was .84 uncorrected and .86 corrected for rater restriction and evaluation unreliability.

The large differences in this study may suggest that the interview has a substantial job knowledge or cognition

ability component (Kaojian et al., 1999). This leads to regarding the GSI as an orally assessed cognitive ability test. It saves the score structure in the interview, the larger the correlation with cognitive ability tests given the pedagogical power and the cost of these tests, one might question the use of the interview at all. Gaspin et al. (1999) performed incremental validity analysis that revealed the interview added little additional explained variance near the splitting level. Conversely, the aptitude tests added additional validity to the interview alone, (Structural Behavioral Interview, SBI).

Hofmann et al. (1999) describe this format as borrowing from both the patterned and situational styles—the characteristics include the following:

- (i) it is based on a critical incident job analysis;
- (ii) it is organized around behavioral dimensions discovered in the job analysis;
- (iii) it uses a standard set of questions about how applicants handle past situations that are like situations that might happen on the job and that might elicit behavior resembling an interview situation;
- (iv) the interviewer asks discretionary probing questions for details of the situation, the interviewee's behavior in it, and the outcome.

- 3) the interviewer takes notes on the interview progress;
- 4) after performing all the same procedures and reviewing his or her notes, the interviewer rates the specimen on behaviorally anchored scales; and
- 5) the ratings are combined so as averaged sum to yield a total interview score to guide corrective decisions (Motowidlo et al., 1982).

This format is more structured than the patterned竈interview interviews ask the same questions of all applicants. However, it is similar to the patterned竈interview in emphasizing questions that reflect descriptions of past behavior instead of hypothetical situations. One of the better-known studies of rating scales is perhaps the best evidence for valid竈interviews. In this study Motowidlo and his colleagues (1982) used the Motowidlo Interview. Other strengths are the "dimensionality" component, that is, allowing for the interviewer to decide what and how to judge the additional information, and the underlying structure to avoid interviewer memory problems. This should tend to use all the positive aspects of its predecessors.

Support is evident for the reliability, criterion-related validity, and construct validity of the MFI (Motowidlo et al., 1982). The test was based on a sample of approximately 300 interviewees, as opposed to the PMSI that was based on 35 interviewees. Results from a series of

events by Motowidlo and his associates yielded an unexpected validity of .22. Further, the interview's validity can be attributed to the behaviorally structured format and that interviewers who follow the format most closely make the most accurate judgments about performance (Motowidlo et al., 1997).

Summary Interview Ratings

The preceding review of the interview literature shows that structured interviews allow the best chance of avoiding interviewer bias, impression management, and other forms of interview rating errors. To the extent that interview ratings are made using the facets of structured interviews, the utility of unstructured cues as interview ratings can be attributed to non-structured cues.

Job Performance Ratings

Job performance is typically measured with a performance appraisal. Performance appraisal is the process by which an observer, usually a direct supervisor, rates the job performance of a subordinates. The first problem is determining what is performance. The supervisor must choose whether to attempt to rate the behavior exhibited on the job to try to quantify the outcome of the subordinate's work. This is a process of judgment of performance (Perrow, 1984) or of performance.

Judgment of performance

If judgment of performance is deemed appropriate, one must deal with the myriad processes used by different raters. The cognitive process used to judge performance is given in a model described by Denrell, Denrell, and Repelino (1999). There are six steps:

- (1) observe behavior,
 - (2) have some cognitive representations of observed behavior,
 - (3) store the representations in memory,
 - (4) retrieve stored information to make judgments,
 - (5) integrate this information with other information (available), and
 - (6) consider what has been a suitable instrument.
- Slater and Lichtenstein (1970) concluded that judges have difficulty weighting and combining information causing them to resort to simplified decision strategies.

Potential problems exist at each point of this process, but an objective interpretation where one must recall behavior and weight it (Brennan & Feldman, 1999). In a real problem, the cause of this problem may be that social and situational constraints on supervisor ratings are present (Judge & Prec�a, 1992). In case research, a link between supervisor knowledge of a subordinate's self rating and the

supervisor's rating was desired. This may follow an accountability to administrators of another service reason. Researchers can mitigate these problems by authorizing performance appraisals made exclusively for the research purposes.

Evaluation of Performance

Evaluation of performance (in the other portion of performance appraisal), to adequately assess performance, one must use proper methods and have access to a valid input of performance that samples the entire performance domain. Since few firms have direct outcome measures available for overall performance measures, performance appraisals are accepted as best measure of assessment of performance. One advantage of supervisory ratings of performance is their flexibility. Performance can be indexed to any dimension for which a definition can be articulated and a rating scale developed (Brennan, 1991). Other advantages include not being artificial, little work sample, and they are easier to communicate and defend (Brennan, 1991). These issues will also be used to evaluate these findings for usefulness.

Three main types of criteria are used to assess the usefulness of performance appraisals: validity, reliability, and psychometric properties. Criteria such as bias, consistency, range restriction, and distribution can usually show they can be used to evaluate performance appraisals. Valid-

As shown by the intercorrelations among dimension ratings, tendency is a shift of mean ratings away from a central midpoint. Range restriction is a measure of the extent to which a distribution clusters around a central point. Distortion represents the inappropriate weighting of dimensions. Though used often to assess the usefulness of performance appraisal data, there is some question if they really are rating errors (Hooper, 1981; Murphy & Cleveland, 1986).

A meta-analysis performed by Murphy and Balmer (1996) showed no strong correlation between errors and accuracy. They evaluated 18 separate studies and found an average correlation of -0.16 (unadjusted for $\alpha = .84$). They conclude that rating errors seem to contribute to accuracy. Becker and Gandy (1994) statistically controlled for halo and it did not improve the validity of the ratings. They too conclude there may be some truth in effects of halo.

Accuracy is widely used to understand the usefulness of performance appraisal data because it requires both the correct rank order and correct absolute level against target scores (Brennan, 1991). However, many measures of accuracy related to traditional rating scales include multiple rating sources (multiple raters) and thus require later data compilation (Podolnyak, 1995).

- 1) elevation, which is difference between observed and true panel scores;
- 2) differential elevation, the measure is differentiating among raters' ratings through across dimensions (main effect of rater);
- 3) stereotype accuracy, indicating differences among dimensions averaged over raters (partial effect of dimension); and
- 4) differential accuracy, or rates differences in patterns of performance across three dimension interactions.

Bonnes (1970) used an index that he terms differential accuracy, but it really shows the reliability of the ratings since it uses only the correlational component of the psychometric definition of accuracy.

Magphy and Cleveland (1980) believe differential elevation is the best measure of accuracy. Bonne, however, do not agree with their accurate evaluations. Congerman, Hines, and Givis (1987) suggest the use of the performance appraisal to evaluate what is important, not by just assessing characteristics of job performance. What this shows is multiple uses for the performance appraisal.

The final method to assess usefulness of performance appraisals is through psychometric criteria. Through internal consistency reliability to used often usually a

Cleveland, 1980). It is not appropriate because the question should be giving distinct information about job performance. Interrater reliability is more appropriate in this instance. It suggests that raters are focusing on similar aspects of job behavior (Cronbach, 1991), but it can still represent shared biases of a few raters.

Construct validity as a psychometric property of supervisory ratings is useful as an indirect measure of accuracy (Murphy & Cleveland, 1991). If the ratings do not suffer from distributional errors, illiteracy bias, first impression, or other errors, the ratings should converge on the desired construct of job performance. Limited research is available concerning construct validity of ratings. However, it often consistently approximates or indicates evidence of construct validity.

For example, Berlin and Bollenbach (1981) found an average correlation of .48 between peer and supervisor ratings. They also found that self and supervisor ratings converged ($r = .80$) as well as self and peer evaluations ($r = .36$, all corrected for attenuation). This is evidence of convergent validity.

There is further evidence of construct validity between subjective and objective measures of performance. To the extent that ratings are correlated with objective measures of job performance, ratings are capturing true

performance (Brennan, 1990). Finally, evidence for correlations between personality measures are as high as correlations for selection tests predicting objective measures of job performance (Schultz et al., 1990).

Since performance appraisals are accepted as the best available method of assessing individual performance, necessary to this make goal for research. If selection of subjects is both essential and proper training is given to raters, accuracy is enhanced (Hanson, 1991). Still, the problem of making the rater attend to the test to do its proper job still exists. One way to motivate raters to be accurate is to hold them accountable for their ratings. This leads raters to make accurate ratings, partly by reducing their reliance on knowledge factors (Baron & Molawski, 1991). Accountability forces raters to make the task a main responsibility and thus reduces reliance on other factors that do not help make good ratings (Schlens, 1991). Raters engage in a more active process of gathering information and of establishing implications of their information (Baron & Molawski, 1991).

Management and Organizational Behavior

Raters must be willing to give accurate ratings or any discussion of their ability to do so to irrelevant. Rating quality is related to the conditions of rating context, not possibly not related to idiosyncratic rater effects (Baron &

normative (Morrison, 1986). From a research perspective, to insure that performance ratings give ratings as accurately as possible, it would be preferable that job performance ratings used exclusively for research purposes are gathered. If supervisors know that their ratings are not going to be used as part of the employee's personnel file, they should be willing to be honest in their assessments. Finally, the use of differentially anchored rating scales would facilitate accurate ratings.

Individual Variables

Gender, Age, Race, and Ethnicity

Two types of individual variables exist: behavioral and non-behavioral (De Dreu, 1987). In his review of the effects of sex on performance appraisal, De Dreu states that most of the research has focused on demographic cues (non-behavioral) and has ignored the potential interactions with physical appearance variables (non-behavioral) and behavioral variables such as perceptualistic cues (De Dreu, 1987). Nonetheless, the interactive nature between normative cues and verbal communication (e.g., appraisals, evaluations) and superiors has emerged in the limited research done by John Reid (De Dreu, 1987).

More research has examined the effects of maternal cues on supervisor ratings. The research in this vein has focus on behavioral and non-behavioral cues into dynastic,

static, and postural variables. Dynamic cues are usually thought such as eye contact, body orientation, smiling, gesticulating and hand movement. Static cues are demographic variables and physical attractiveness. Demographic cues refer to social characteristics such as speech rate, volume, tone and pausing. As in the performance appraisal literature, however, much of the research has focused on visual cues.

Visual Cues

Visual cues can have powerful effects on the favorability of interview ratings. For instance, the relationship between interview attire and physical attractiveness has been shown (Fiske, Brown, & Thorpe, 1978; Ross & Goranson, 1987) as has the clothing worn in an interview (Fiske, Brown, & Ross, 1986). Head gestures, smiling, and the manner that a job applicant presents his or her body with regard to the interviewer all have had effects on interview ratings without, e.g., a smile (Ross, 1986; Rossman, 1984; Parker & Jackson, 1979; Wallbom, Banfield, Stevens, & Donald, 1978; Woods & Ross, 1977). Finally, high levels of eye contact indicate dominance in face-to-face interactions (Bussell, 1994) and have been shown to affect judgments of applicant qualifications (Fiske & Ross, 1986). Thus, five visual nonverbal cues stand out as having been examined for their effects in

nonverbal visual cues, physical attractiveness, smiling, gaze, hand movement, and body orientation.

High levels of each of these individual variables are hypothesized to positively relate to interview and job performance ratings. Since each variable by itself may only have a small relationship with the dependent variables, an additive combination of all five variables more accurately represents the combined effects of visual cues. Following previous findings, this composite variable is defined as follows:

$$\text{Visual cue Index} = \text{Gaze} + \text{Smiling} + \text{Gentleness} + \\ \text{Physical Attractiveness} + \text{Body Lean}$$

An index variable such as this can then be examined for overall effects of visual cues on interview and job performance ratings. Therefore, the first set of hypotheses to test the model in Figure 2-1 are:

Hypothesis 1a: Visual cues are positively related to interview judgments.

Hypothesis 1b: Visual cues are positively related to job performance ratings.

Method

Little work has been undertaken to examine the impact of audio cues. A typical study isolates some general linguistic cues, such as speech rate and pausing, but gathers unadjusted ratings to measure them. For instance, one study

found those job applicants who spoke before answering, those on top management levels, and applicants whose names included corresponding occupations speech disturbance and impeded their speech fluency (Mollenhaufer et al., 1979). Speech fluency was related to interview ratings.

However, this same study measured loudness of voice, but found no significant relation to the employment decisions. One could speculate on these two results. First, availability as a psychological property was not examined. What one finds outside of a field, may be available. Thus, loudness of voice, for example, should not be dismissed as unrelated to employment decisions unless availability of settings is assessed, or another method of measurement is found. An alternative way to measure vocal characteristics is objectivity with the use of computers before illustrating subjective impressions of vocal characteristics, a closer look at other personal traits, or voice characteristics is needed.

Voice Characteristics

It should occur that voice characteristics are indicators of one's personality or even the emotional state of speakers (Higginson & Hartin, 1991). Higginson and Hartin (1991) noted that voice pitch analysis was useful in marketing research; changes in emotions can be detected through pitch changes in the voice. This is one of the

technologies that lie detectors use. However, a speaker has relatively little control over perceived voice quality over one's voice quality can completely suppressed or disguised (Kursten & Mathiesen, 1998). Through accomplished speakers can use different patterns of voice than when deemed appropriate (Pearce & Broome, 1972). Thus, voice characteristics may be stable attributes of a person and they may indicate individual traits.

Some work has been done toward tying a person's speech behavior to organizational consequences. Participants of multistage sound production were positioned all around in two different situations (Neary, 1979; Pearce & Schell, 1974). Based on those findings, the assumption was made that successful individuals in management should have normal communication ability and unsuccessful individuals would have disturbed patterns of communication (Neary, Morrissey, & Pearce, 1979). This assumption was supported in their study that used data from executives at three levels of success. They concluded successful managers had different psychological characteristics than unsuccessful managers and this could be inferred from speech behavior (Neary, Morrissey, & Pearce, 1979). Thus, there may be a practical use for knowing individual differences in voice characteristics. If specific characteristics of the voice can be reliably measured, their effects on job performance

ratings and interviewer ratings would be examined.

Fundamental Frequency (Pitch)

The voice characteristic that has been most thoroughly studied is fundamental frequency (FF), or the pitch of a voice. Many researchers have suggested that future academic success can be predicted with voice pitch and range (Kossek & Kellerman, 1977). More successful students have been found to use higher pitch, less voice, and more appropriate intonation than less successful peers (Brodsky, 1982; Brodsky and Lyman, 1984). Fossel more successful phone interviewers had higher FF and greater range in FF than less successful interviewers.

Brodsky, Lassiter, and Wolf (1970) found higher pitch levels increased impressions of competence, dominance, and assertiveness. Aswaniach (1974) could claim to be true for women, but not for men. Women didn't express this as follows. At pitch close to a threshold of about 260 Hz in men, favorable impressions start high, but past this point, not as the pitch approaches female levels, impressions quickly become undesirable.

In education research, it would be interesting to know if "high" and "low" voices are correlated with job performance. Do women, or high voice individuals, receive higher performance evaluations? Or do high voice individuals receive lower ratings from their judging their performance

from videotaped. One might argue that rates of performance also have individual assays by the rater's behavior may give higher ratings to a low voiced female, and to a low voiced male. This reflects common stereotypes of the attractive business leader: low voiced individuals are considered better managers through greater compliance of followers via a dominant sounding voice. Social information processing theory suggests that people make summary judgments of suitability for leadership based on observation of prototypical attributes (Baldwin & Johnson, 1990; Banaji and Rudin, 1993).

Another voice characteristic that may reflect positive managerial traits is the range of frequency an individual uses when speaking. A general assumption is made that a speaker is dynamic and an extrovert if the pitch is varied widely (e.g., Green & Morrison, 1993; Hunter, 1978). For instance, Scherer (1978) found that greater pitch variability was related to perceived speaker dynamism, potency, extraversion, and extraversion (inclusivity). Those who use a small range would sound monotone, and may be considered boring. Bates, Stirling, and Scherer (1973) manipulated the variance of F0 as a lab study and found that increased variance of F0 made the speaker sound more extraverted, and in a lower context, more competent. Low inclusions of F0 had the opposite effect in this controlled

experience. Therefore, speakers using a larger range of F0, those who vary their voices considerably, might be considered more charismatic and have their performances rated more favorably.

Speech Rate

RATE OF SPEECH may be positively related to ratings of performance, but only to a certain point. Brumba (1985) shows a curvilinear relationship between rate and availability. Extraverted low rates of speech availability were initially utilized (up to 187-224 syllables per minute), but after about 270 wpm, decreased in effectiveness (Brumba, 1985).

Most studies have found faster speech rates increase competence and attractiveness perceptions (e.g., Belohlavek & Williams, 1979; Fossen & Brumba, 1973; Hallinan et al., 1992). Brumba, Stepp, and Langhart, (1973) found that slowing the speech rate makes the voice sound less competent, but increased rate makes the voice sound less benevolent. Thus the speech more closely may be perceived as less intelligent or "trustworthy" (Williams, 1976). Finally, slow speech in association with low vocal pitch is associated as an indication of anxiety or despair (Kleckler, 1992).

Voice Intensity

A related variable to voice intensity, or *volume*, is the use of pauses on talk silence to particular ideas, and unfilled pauses used in strategic locations can enhance speech (Belgrave & Kies, 1993). If the pauses are used such that they contribute to the speaker becoming more fluent, then pausing is good. Furthermore, Marshall, Stevens, and Freed (1994) found fluency of speech strongly contributes to the employment decisions. These authors found if a candidate pauses before answering a question, speech fluency is inferred and favorable interview evaluations result.

Amplitude Variability

Up to a moderately high level, vocal variability, or loudness, is positively related to impressions of extraversion, sociability, and dominance (Drozdowski, 1991; Schauer, 1991). Conventional speech located three feet from the speaker has an average loudness of 60 decibels (dB), quiet speech is approximately 35-40 dB, and shouting is 75 to 85 dB (Schauer, 1991). However, the variability of this loudness provides quite different information about the speaker. Amplitude perturbation is short term instability of the intensity in a vocal signal (Marques & Mathiesen, 1999). Also called jitter, measures of this quality quantifies the variability of the intensity (amplitude) of

the voice. This variability has been associated with the perception of *harmonicity*, a vocal quality that is understandable (Daley, 1997). A smooth speaker, one who would elicit higher harmonicity judgments, would have low levels of *discrepancy*.

By extension, certain voice characteristics may correlate with different performance ratings because of the "pleasantness" of the voice sound or the way that the voice falls into stereotypes of the gender and beliefs of what constitutes "good" managers. Positive voice characteristics often enhance performance by spurring others to perform better. For instance, a manager with a "pleasant" sounding voice may induce followers to exhibit more helping behavior, and thus, increase the effectiveness of the manager. Research has shown evidence of the presence of an "attractive voice" (Buckner & Briner, 1999; Buckner & Myers, 1997; Buckner, Hodgetts, & Myers, 1998). Thus, a combination of audio cues described here may encompass this attractive voice. A review of the attractive voice literature may help to see its organizational significance as an indicator of voice cues.

ATTRACTIVE VOICES

Every voice is unique to the speaker (Brown & Patterson, 1999). Some voices are more "attractive" sounding than others. It is possible that attractive voices

are associated with more favorable impressions similarity to the physical attractiveness stereotype. Studies have shown that attractive people actually develop more favorable attitudes and exhibit more confident behavioral patterns (Buckner & Drivé, 1990). These authors propose a vocal attractiveness stereotype that will represent the influence of the auditory portion of appearance such like the physical attractiveness stereotype that represents the influence of the visual portion of appearance.

In the extent that impressions may be a function of visual characteristics, these impressions likely will vary as a function of vocal attractiveness (Buckner & Drivé, 1990). If there exists reliability among scores of attractive voices, the case can be made for a vocal stereotype. This research has been performed and shows that observers can agree on whether or not a voice is attractive, with interrater reliability estimates averaging .83 (Buckner & Drivé, 1990).

Furthermore, Buckner and Drivé (1990) found that women with more attractive voices were rated more favorably than women with less attractive voices. These authors point out that this finding is robust, since the subjects have been replicated across two studies. However, they were unsuccessful in determining the dimension of a vocal stereotype. These attractiveness had greater effects

an affiliation bias in the study, but larger effects on likability in their second study. In an effort to elaborate upon these findings, Duckering, Bodenhausen, and Mylrea (1996) used the six subscales of personality (Costa & McCrae, 1980). Results from this study point to no affiliation bias that judges find attractive, but has the presence of confidence without giving an indication of whether the person is good-natured (Bodenhausen, Bodenhausen, & Mylrea, 1996).

Predictability weakens effects of the social attractiveness stereotype when criteria are used to describe targets (Duckering, Bodenhausen, & Mylrea, 1996). Perhaps subjective measures of voice characteristics can better explain what determines a social attractiveness stereotype. Duckering and Mylrea (1996) looked at both subjective and objective measures of voice quality as general determinants of impressions. They found that both types of measures predicted social attractiveness. However, if an objective way to measure vocal tone were available, the positive lesson is predictive validity of attractive voice would be avoided.

From this review, three audio variables have been shown to impinge on social attractiveness perception. These five predictions could be compared to our 40 original total attractiveness results, or the results case in Figure 3-1.

The literature review presented supports the following combination of three variables that form an index where high values are hypothesized to lead to higher ratings of performance:

$$\text{Audit Cue Index} = \text{Speech Rate} + \text{Volume Score} + \text{Range of Pitch} - \text{Amplitude Variability} - \text{Pitch}$$

With this index representing audit cues, the next set of hypotheses can

Hypothesis 1a: Audit cues are positively related to unfavorable judgments.

Hypothesis 1b: Audit cues are positively related to ratings of job performance.

Socializer Variables

Reactions to Stereotyped Cues

When a speaker has an attractive voice combined with physical attractiveness, often favorable ratings can result. This combination also could be explained as social competence, since nonverbal behavior has been argued as a manifestation of social competence (Fridlund, Philippot, & Gurtman, 1992). Though social competence is difficult to define, it generally relates to evaluations judgments of the adequacy of a person's social performance. In certain domains social variability could be associated with the concept of social competence. If an interviewer displays positive social

performance is the interview, more favorable ratings would result.

Hostile or neutral personal reactions toward the speaker. In de Dreu's (1993) model of the impact of hostilities on the performance appraisal process, two dimensions of interpersonal behavior, affective evaluations and perceived power, mediate the relationship between hostilities and performance ratings. Affective evaluation represents the degree of liking the rater has for the rater. Perceived power reflects the extent of influence that the rater has in the supervisor-subordinate relationship (Kinnar, 1988). This model predicts that the impact of hostilities on ratings of performance is mediated by the degree to which the rater is judged positively on affective qualities. Some support has been found for the model (e.g., Blaiger & Patterson, 1993; Heineke, 1972; Kinnar, 1988). However, the mediating variable "perceived power of the rater" is not relevant concerning interview ratings, since the supervisor has little power in this situation. Thus, that link will not be examined here. Nevertheless, the other mediating variable in this model, "affective evaluation of the rater," is relevant in both job performance appraisal and interview performance appraisal. This affective evaluation may encompass several different personal reaction variables.

Facial-Features

The literature has examined the effects of perceived cognitive variables. For instance, about a third of the variance of scores of riding fast by teenagers on roller skating is accounted for by perceived cues (Pewell, Cook, & Barr, 1991). These positive first impressions are gained by using the expressive behavior (spontaneous fluency, speaking fluency, and body movements such as head movements, etc., (Mossé & Friedman, 1994). Generally, positive evaluations are attributed to those performing behaviors that are more active (Fiske & Fiske, 1982). Those who use more active expressive behaviors (i.e., more gestures, more vocal range, etc.) increase the attention paid to them by the observer; that is, turns, may cause alternative evaluations to become more positive (Fagin & Fiske, 1981). Riggio and Friedman (1990) found strong relations between perceived cues and likability, especially speaking fluency for men and facial expression for women.

Nonfacial variables associated with an individual's level of attractiveness have been examined also. For example, physically attractive people have been found more permissive than nonattractive people (Chaitkin, 1979). Facial appearance in particular has been shown to interact with gender variability in determining attitude change as a result of persuasive speech (Swanson, 1992). Swanson

(1990) found a positive relationship between gaze and persuasiveness.

Audio cues that convey pleasantness foster favorable credibility judgments and have been associated with persuasiveness (Burgoon, Rich, & Rhee, 1998). These researchers interpreted their findings to mean that credibility and persuasiveness are simultaneously influenced directly by conversational variables. Other audio cues have been positively correlated with persuasiveness such as degree of fundamental frequency (Burgoon, 1990), pitch effect (Linton, 1994), and speech rate (Burgoon, 1990).

Competence as a personality trait has been shown to correlate with perceived cues. Gibbons, Donelan, and McElroy (1992) found more social characteristics (increased importance of competence, dominance, and assertiveness) among SPs, which indicated expansive roles, increased perceptions of competence in speakers (Preston & Gagné, 1991, May, 1994; Burgoon, 1990). Visual cues apply as physical attractiveness (Balding et al., 1970, 1978), smile (Gholam, 1994), and gaze (Fitzgibbons & Sporer, 1978) all have been positively related with competence.

Individualistic traits were physically attractiveness (Carrington, 1979), sex (Maitland & Liss, 1994; De Zeeuw & Reijnders, 1994), and the gained attention by all the listeners (Burgoon et al., 1990) were

seen as more trustworthy than those who exhibited low levels of these qualities... Similarly, listeners were more apt to comply with requests when called a hero (Haque & Aronoff, 1991) and also rated the voice of the listener (Bullinger & Ross, 1990). Speech acts have been shown to increase levels of compliance also (Gilligan & June, 1988).

Finally, the degree to which one will help another has been explored with regard to conversational cues. Valentine (1991) found a positive relationship between pros and helping behavior. In another study, expressive voice range (AVR) was related to increased helping (Holden & Fertig, 1983). Thus, the literature has shown several personal cue-like variables to be related to conversational cues.

The relationship between conversational cues and perceived conversational cues has been established (see the review above). It is likely that *either* the combined effects of personal reactions or personal reactions will be used in this study — this index represents the degree of trust in the speaker (trust), degree of liking felt for the speaker (liking), degree to which the listener feels the perceived by the speaker (perceived), degree of competence felt toward the speaker (competent), degree of dominance listener feels the speaker has shown (dominance), degree to which one would comply with the

speaker (inquiry), and degree to which one would help the speaker (help). The measure is composed as follows:

$$\text{Personal Reactions} = \text{trust} + \text{liking} + \text{affection} + \\ \text{competent} + \text{respect} + \text{comply} + \text{help}$$

If the effects of numerical cues on these personal reactions to a speaker can be shown in the context of the manager/subordinate relationship, important implications for contextual job performance and interview favorability can be quantified. Thus,

Organizational cues are positively related to personal reactions.

Organizational cues are positively related to personal reactions.

CHARACTER, PERSONALITY, TRAITS

Personality cues also may reflect underlying personality traits related to patterns of behavior that lead to favorable judgments. Behavior that requires objectivity in which judgments are made sparing with the Big Five personality measures. This follows the logic of a trait theory of personality, one that views individual differences in behavior as moderated by stable, consistent dispositions in individuals. Behavior is measured across time and situations and should be generalizable from the measured traits. Thus the relationships between extraversion, agreeableness, and conscientiousness have been established.

with organizationality relevant outcomes (e.g., Berndt & House, 1983). It is desirable for these skills to have specific Big 5 personality factor components of correlated outcomes. Then, we can assess the hypothesized link between correlated cues and outcome of performance by looking at their relationship with correlations of personality variables.

It is not that difficult to infer accurately personality traits as acquaintances, or even people to whom we have minimal exposure to their behavior (e.g., House, 1977; Kenny & Rehg, 1990; Kihira, 1991). One would expect it much more difficult to infer personality traits as acquaintances with whom one has zero acquaintance. However, research has shown that even at zero acquaintance periods one makes consistent accuracy judgments on acquaintances (e.g., Allbright et al., 1991; Johnson & Johnson, 1991; Kihira, 1991; House & Goldsmith, 1991; Kihira, 1991). However, Kenny et al. (1990) note that only extraversion and conscientiousness are consistently attributed to others from zero acquaintance periods. Agreeableness and the last difficult of the Big 5 factors to evaluate to strangers. Thus, though agreeableness is associated with some organizationality relevant outcomes, it may not be as useful in our organizationality difficulty. We turn to this study.

On the other hand, research has shown that people can consistently attribute extraversion and conscientiousness on others. In addition, a study by Berkman and Webster (1992) showed some agreement on perceived cue usage across personality factors. One hundred subjects were videotaped while entering and walking around a room, sitting, then reading a standard test. Twenty-four raters gave personality ratings of the experimental subjects, based on the Big Five dimensions. These ratings formed an alternative measure of the traits made by others to compare with self ratings. The four conditions for rating were silent film, still picture, audiotape, or soundfilm.

Significant results were found for the correlation between extraversion and both voice for self ratings ($r = .12$) and even stronger with the percept ratings ($r = .42$). Powerful voices also were related to extraversion with the same pattern between self and percept ratings ($r = .19$, $p < .05$). Conscientiousness was positively related to high voice using self ratings ($r = .31$) and with perceptual ratings ($r = .62$). Though significant significant correlations with other voice characteristics were found, they did not match with the self ratings in this study.

Further evidence of this consistent relationship between Big Five personality factors and both types of associated cues is available. Perceptions of others'

agreements have been positively correlated with gender speaking fluency (Pawletz & Reed, 1993), speech rate (Gronlund, 1974), and social network (Harkness & Lickliter, 1992). Agreements have been strongly related to all visual cues (Harkness & Lickliter, 1992; Pawletz & Reed, 1993), but little evidence has supported the relationship between audio cues and agreements. This may reflect the difficulty of inferring agreements at mere acquaintance with the subject (Albright, Savoy, & Valley, 1990).

Besides the relationships described above, physical attractiveness (Russey et al., 1992) and voice audio cues (Gronlund, 1974) have been positively correlated with extroversion. Hippie and Pitkänen (1994) found a strong relationship between speaking fluency, verbal fluency and extroversion. Though extroversion has been the easiest of the Big Five personality factors to infer upon others, given certain visual cues only, conscientiousness and agreeableness to a lesser degree should be related to nonverbal cues since they are related to incentive motives and job performance ratings. Therefore,

Hypothesis 4: Visual cues are positively related to visual personality attributions of extroversion.

Hypothesis 5: Visual cues are positively related to visual personality attributions of conscientiousness.

Hypothesis 1a: Visual cues are positively related to visual personality attributions of extraversion.

Hypothesis 1b: Audio cues are positively related to visual personality attributions of extraversion.

Hypothesis 1c: Audio cues are positively related to visual personality attributions of conscientiousness.

Hypothesis 1d: Audio cues are positively related to visual personality attributions of agreeableness.

Research Notes: Statistics: Beta Co.

To this point, this work has hypothesized about the importance of audio and visual characteristics in determining favorable interview ratings and scores of job performance by empirically examining the links shown in Figure 2-1. Following Baron and Kenny (1986), if significant relationships are observed in the first four sets of hypotheses, the final test of the mediating model can be assessed. For visual cue and interview judgments,

Hypothesis 2a: The effect of visual cue on interview judgment is mediated by visual perceived reactions.

Hypothesis 2b: The effect of visual cue on interview judgments is mediated by visual personality attributions of extraversion.

Hypothesis 2c: The effect of visual cue on interview judgments is mediated by visual personality attributions of conscientiousness.

Hypothesis-H1: The effect of visual cues on interview judgments is mediated by visual personality attributions of approach/aversion.

Similarly, the model will be tested for mediating effects of the relationship between audio cues and interview judgments.

Hypothesis-H2: The effect of audio cues on interview judgments is mediated by audio personal reactions.

Hypothesis-H3: The effect of audio cues on interview judgments is mediated by audio personality attributions of extraversion.

Hypothesis-H4: The effect of audio cues on interview judgments is mediated by audio personality attributions of conscientiousness.

Hypothesis-H5: The effect of audio cues on interview judgments is mediated by audio personality attributions of agreeableness.

The preceding tests will have resulted in 12 items in Figure 3-1 with interview judgments as the dependent variable. The hypotheses H1 and H2 also will be tested with job performance ratings as the dependent variable. To link visual and audio cues as the influences to job performance ratings, the assumption is made that the cues cues are represented in the job and measured by job performance ratings – Put another way,

Hypothesis_H1: The effect of visual cues on job performance ratings is mediated by visual personality attributions of extraversion.

Hypothesis_H2: The effect of visual cues on job performance ratings is mediated by visual personality attributions of conscientiousness.

Hypothesis_H3: The effect of visual cues on job performance ratings is mediated by visual personality attributions of agreeableness.

Hypothesis_H4: The effect of visual cues on job performance ratings is mediated by visual personality attributions of conscientiousness.

Finally, to complete analysis from part one, the following hypotheses predict mediating effects with audio cues and job performance ratings:

Hypothesis_A1: The effect of audio cues on job performance ratings is mediated by audio personal emotions.

Hypothesis_A2: The effect of audio cues on job performance ratings is mediated by audio personality attributions of extraversion.

Hypothesis_A3: The effect of audio cues on job performance ratings is mediated by audio personality attributions of conscientiousness.

Hypothesis.H1: The effect of audio cues on job performance ratings is mediated by audio personality characteristics of approachness.

Research model setting - Part Two

If the above hypotheses hold, specific partial explanations for the relationships between interview cues and both interview fluency and job performance ratings will be evident. In the first section of Part One, the reliability coefficient between the interview ratings and the job performance ratings partialling out the influence of interview cues is examined. This information would separate cues of reliability, one such type of coding interviewers. Thus,

Hypothesis.H2: Visual cues are a partial cause of the reliability coefficient for the interview.

Hypothesis.H3: Audio cues are a partial cause of the reliability coefficient for the interview.

To expand what is learned in H1a and H1b, the relationships of sub items between interview ratings and job performance ratings are analyzed in the second section of Part Two. If sufficient variance in the reliability coefficient is accounted for by numerical cues, it becomes interesting to know if interview ratings and job performance ratings are more or the same. For that matter, whether both types of cues are personal measures and potentially

attenuate the error when making their ratings is also important. Four questions are posed to query these ideas:

Research Question 1: Do interview raters and job performance raters use visual perceptual cues in the same way?

Research Question 2: Do interview raters and job performance raters use audio perceptual cues in the same way?

Research Question 3: Do interview raters and job performance raters use general inferences inferred from numerical cues in the same way?

Research Question 4: Do interview raters and job performance raters use personality traits inferred from numerical cues in the same way?

CHAPTER 2

METHODS

Participants

Plant-level managers were interviewed as part of a larger project to facilitate a structured interview for a national publishing firm. The interview was developed with nine questions to assess seven dimensions of management effectiveness: leadership, concern for others, diversity, customer service, problem solving, professional integrity, and oral communication. The sample of 310 managers included 180 females and 130 males, all with less than three years of management experience. There are 4) White (74), 17 Black (13%), nine Hispanic (3%), and three Asian (1%). Their average age is 32.3 years.

Performance Measures

Immediate supervisors provided supervisory ratings on the same dimensions used in the development of the interview questions. These rating scales are in Appendix A. Performance ratings were made independently for the validation study.

Interview Ratings

While conducting the interviews, videotapes of the actual interviews were sent to three business professionals in the firm. They were instructed to watch the interviews using an interview packet that contained the questions, with space to take notes. The same scales used to assess job performance were used to rate interview ratings. Included in the packet were instructions not to rate anyone whom they knew.

Preparation of Experimental Materials

Job performance ratings and interview ratings were gathered in the field, but the rating variable had to be collected in the laboratory. For this purpose, the sample of videotaped interviews was broken down into three based on job performance ratings, from high to low. Twenty-two sets of interviews were copied with five of the 110 interviews in each set. Each set had one interview taken from each fifth level of performance ratings. Two minutes randomly chosen from the beginning, middle, and the end of each interview was copied onto a separate videotape. After each interview, a one minute blank portion was utilized for discrete inspection. Thus, each of the 22 videotapes contained five interviews reduced to a two minute portion with a one minute blank spot between each. There it was videotaped and then copied to audio tape for vocal analysis. This ensured that

both types of converted cues, visual and audio, were assessed on the same portion of the interview.

Measures of Rapport

Student raters judged the visual converted cues of the interviewee. Definitions of the variables to be used in this study, physical attractiveness, smiling, gaze, hand movement and body orientation, were taken from the literature (Brehm, 1973; Fiske & Cialdini, 1980; Kiesler, 1994; Knapp & Hall, 1992). The author ran every session and personally trained the raters for 30 minutes on the use of seven point scales to make judgments (Appendix B). To boost reliability, three raters were used to rate each interview. Each rated five interviews. Thus, 110 students participated in this task.

After the audio portion of the videotapes was transferred to audiotape, the speaker's voices were analyzed for individual differences on voice characteristics. These voice cues can be measured both subjectively and objectively. Since computer-based methods of voice and speech analysis have been demonstrated to be useful tools to measure perceptible variables objectively (Schaefer, London, & Wild, 1994), audio cues in this study were measured with a computer voice analyzer. The same sections of the 110 audiotapes tapes used to measure visual cues were used to measure the audio cues. Four random samples of

speech, spoken throughout the interview, were taken to insure that recordings are reliable. Measurements were about 10 seconds long. The software deficit is set at six seconds because that is sufficient to sample running speech. However, sample time was increased to 10 seconds to be certain to capture speech that contains several intonational changes. Appendix 4 is a sample audio clip transcribed (Fig.).

Definitions of audio file variables

Considering that objective measurement of voice characteristics is relatively unknown outside speech and pathology laboratories, definitions of the specific voice characteristics are offered. Five variables are measured and used in this study. The first is pitch. Pitch is the average fundamental frequency over the entire sample. It measures how high or low a voice is. The habitual average pitch level for males is 125 Hz and 225 Hz for females (Harms, 1993). Thus, pitch is corrected for this psychological gender difference by subtracting the difference (20) from the values for females. Though habitual pitch tends very according to the individual and the prevailing circumstances (Harms & Haldeman, 1993), all participants were interviewed under the same circumstances so variability can be attributed to individual differences.

The second music variable is pitch variability. It is the standard deviation of the fundamental frequency within each voice sample. In this study, pitch variability is the average of the four measurements' standard deviations. This gives us an estimate of the pitch variability, or fundamental frequency range, employed by the speaker.

Speech rate is a variable that reflects the length of the pitch period, or how long the speaker holds a certain level of pitch. When one is speaking, this period changes when a new sound is uttered, such as a new syllable. Thus, each speech rate measurement is the average pitch period (in milliseconds) that can be used as a proxy for speech rate. Most speakers use syllables per second, but since there was no script for the interviewees to follow, each person uttered different words using syllables per second very difficult to measure. To check for relevance, the interviewees' responses to the first question were transcribed exactly and measured with both syllables per second and the speech rate proxy described above. These two measures correlated .88. Thus, the proxy seems sufficient both theoretically and practically.

The fourth variable is *pauses*. This variable measures the degree of accented bias in the sample, averaged over all measurements. It takes into account the bias produced not just the number of pauses—

Finally, amplitude variation gives an indication of the variability of the speaker's peak-to-peak amplitude within the trials sample. The measure measures the volume of each utterance. This variable shows how much the speaker's conversational volume has been at the level of volume in the sample, averaged over all utterances.

Measures of conversational reactions and personality

A laboratory study was conducted to gather ratings of personal reactions to the messages and personality attributions of the speakers. One half the students were assigned to rate personal reactions to the speakers and the other half was assigned the task of making personality attributions of the speakers. To make their ratings, they were exposed to only one channel of information, either the visual or the audio channel. Thus, the four conditions in this experiment are personal reactions-visual information, personal reactions-audio information, personality assessment-visual information, personality assessment-audio information.

To sum this experiment, students either listened to a portion of the interview recorded on audiotape or viewed still portions of the videotape and provided ratings on five messages as though they were subscribers. They rated the messages on one of two variables. One half the raters provided their perceptions of the messages on Fig 3

personality factors (extraversion, conscientiousness, agreeableness, neuroticism, and culture) as though they were subordinates. They were instructed on how to use the 20-item, seven point rating scale (See Appendix D) given by Goldberg (1993).

The other half of the raters provided their personal reactions to the managers as though they were subordinates. They were limited to yes/no point scales for the same 15 different personal reactions. Each personal reaction was measured with a two-item scale; thus, the entire personal reaction scale contains 30 items (Appendix E). Each rater rated 1000 (10% of the 10,000 managers from the entire sample) performance scores on either personal reactions or personality distributions using only one type of cue or showed of individuality. This required 400 student raters for the four methodologies.

Conducted in this manner, the importance of supervisor's notice that possibly affect the behavior of followers was minimized from the perspective of subordinates. The reliability of observer, or inter-rater agreement ratings of the Big 5 personality traits has been established (Reis, Harrich, & Stassen, 1991) as has the reliability of other observer ratings (Dobrova & Wohrer, 1992).

Methodology

Correlational analyses were undertaken to assess the relationship among all variables. As discussed in Chapter 2, no index is used to combine the five visual cues into one variable. Each variable was standardized before combination to ensure the largest non-perspective variable does not have undue influence on the index. Again, that index is:

$$\text{Rudee-Dur Index} = \text{Speech Rate} + \text{Voice Breaks} + \text{Range of Pitch} + \text{Amplitude Variability} + \text{Pitch}.$$

Similarly, the five visual cues, the seven personal reaction variables, and the four 100-point personality scales were respectively combined into three variables. Because they all use the same metric, individual variables were not standardized before combination. The visual cues are an additive scale, personal reactions are an additive scale, and personality attributions are four 100-point scales scored in the positive direction and summed.

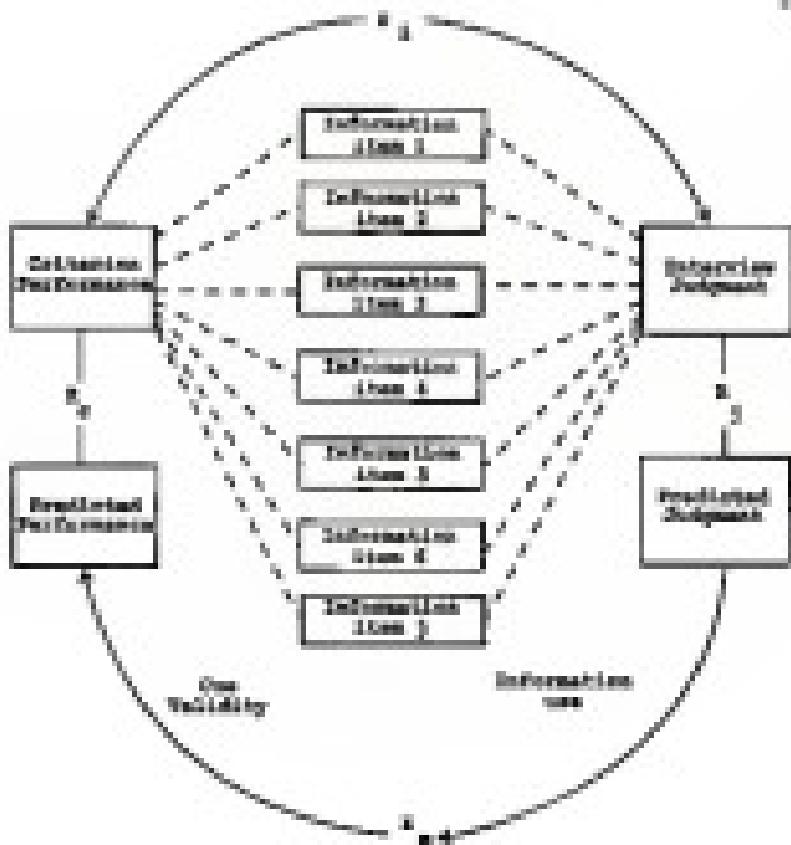
Next, one of this study tests the mediating effects of personal reactions and perceptions of credibility on the relationship between associated cues, interview judgments and ratings of performance. If this relationship exists when the variance attributed to the Rudee-Dur personal reaction variables is partialled out, it will be indication of their mediating effects. Regression analysis is used here following Baron and Kenny (1986).

A different strategy used in most of that work of the study. A traditional two-sided test has been suggested as a useful alternative research design for selection research (Kishor, 1992). By choosing the appropriate one-sided test predictions, the two-sided test help to achieve better accuracy in the inference process of the interview (Hofford et al., 1989). That the two-sided test is designed to determine the degree of agreement between the two sides of the model, gives the data in the center of the model (Figure 2-1).

First, agreement on the use of three variables must be made: interview judgments and job performance ratings can be predicted by using interview performance with unweighted raw correlations on one side of the model, and correlations between subjective judgments and unweighted sum of the other side of the model. That is, the case will be agreement on both dependent variables, giving the predictions from the regression as a new variable. The predictions from each regression equation can then be unweighted to estimate common usage of the information items. This is analogous to a corrected validity coefficient (Gullion, 1989).

These analyses were toward understanding the effect of unweighted raw on interview validity. Another way to look at this problem is through partial correlations and corresponding variance reduction within SCAR's spectra.

(1991). This method is used to minimize variability loss when the effects of the noise are considered.



S = single-directional
 I = unidirectional information

R = reciprocating information

P = multiple-directional for
 \downarrow predictability of activities

\uparrow predictability of products

FIGURE 3-3
 MODIFIED ECONOMIC ORDER MODEL.

CHAPTER 4 RESULTS

Measurement Reliability

Considering the data come from different sources, including ratings, reliability must be dealt with first to determine the stability of the different measurements. Once reliability is established, relationships can be examined with confidence.

Reliable Measures Only

Table 4-3 shows the correlations within the audio-visualized cases. Though pause is highly correlated with amplitude variability ($r=.84$, $p<.001$), these variables do not measure the same construct. Amplitude variability measures the short-term variation in loudness a greater unit while pausing reflects the average amount of time the speaker has no utterances. Likewise, the correlation between speech rate and amplitude variability ($r=-.81$, $p<.001$) shows a true relationship that is unaffected by amplitude. Reliability for these variables is calculated as the average correlation of the four measurements taken.

Die oben dargestellten Ergebnisse bestätigen die Hypothesen über die Wirkungsweise von *in vitro*-Antikörpern auf die Zytolyse der Zielzellen.

corrected by the Spearman-Rhoen formula. Reliability ranges from .82 for pitch availability to .93 for pitch. Pitch variability can reasonably be expected to be lower since a greater range has available to pitch acoustic measurements much easier than varying the other vocal variables. Reported for this study, is the reliability of the audio tape index ($\alpha=.93$). It is sufficiently high to use as an index of vocal availability.

Statistical Results

Correlations among the five visual corrected scores are shown in Table 1-2. Here, all variables correlate fairly highly, ranging from .73 to .87, though this is not as high as one might think given the same instructions. Relays were thoroughly trained in this aspect of the study by daily task analysis separately. Reliability here is calculated as the interrater reliability of five raters corrected by the Spearman-Rhoen formula. Reliability is good, ranging from .71 to .86, and is very high on the Index ($\alpha=.93$). Thus, a visual cue index score can be used to test the model.

TABLE 4-2
CORRELATION COEFFICIENTS OF VARIOUS PREDICTOR VARIABLES

	1	2	3	4	5	6
1. <i>Intercept</i>						
2. <i>Family size/age/size</i>	.47					
3. <i>Father</i>	.11	.77				
4. <i>Provincial residential status</i>	.44	.74	.51			
5. <i>Second income</i>	.47	.77	.41	.42		
6. <i>Travel One Income</i>	.21	.26	.61	.42	.75	

Relationships are discussed elsewhere in TABLE 4-1. Term values are based on regression from Table 4-1.

Personality Judgments

Perceived fit of the interviewee was assessed by treated student raters in a controlled laboratory experiment. Thus, the types of reliability need to be assessed scale and rater. First, rater reliability was computed by calculating coefficient alpha for each of the Big Five personality factors (Table 4(i)). Each factor was assessed with a seven-point scale. Reliability estimates range from .48 to .78 in the visual cue condition and from .45 to .79 in the audio cue condition. Considering the raters had only one channel of information from which to make their personality judgments, these somewhat low reliability evaluations are expected. The lower reliability in the experiments, the darker that the extrapropositional dimension has shown to be the more difficult for raters to agree upon (e.g., Robertson & Linton, 1992). The other two organizationally relevant factors, extraversion and conscientiousness, are sufficiently high.

Rater reliabilities for the personality factors are similar to those above, ranging from .48 to .79 in the visual cue condition and from .37 to .80 in the audio cue condition (Table 4(ii)). These are calculated using the

TABLE 4-2
BIG 5 PERSONALITY SCALE RELIABILITY

	Condition	
	Mixed, one day	Mixed, three days
Extraversion	.79	.79
Conscientiousness	.69	.69
Agreeableness	.69	.69
Neuroticism	.68	.69
Intelligence	.62	.63

Coefficient Alpha: 5 items per cluster $n = 840$

intercorrelation reliability of the five scales, corrected by the Spearman-Brown formula. Correlations among the multi-dimensional set of features are given below the diagonal in Table 4-3 and among the visual attributes and the personality features above the diagonal. The correlations between extraversion and the other features, along with the intercluster reliability estimate for extraversion, support the contention made above that this construct is difficult to agree upon from an observer point of view. Interrater agreement is high for extraversion (.95-.79) in the visual

„Fremde“ gesetzgebende und den verwaltungswirtschaftlichen Interessen folgend, so dass die bestehende Verwaltung nicht mehr erträglich ist. „Verfahrensreformen“ sollen die bestehenden Verhältnisse ändern und einen anderen Verwaltungsaufbau ermöglichen.

	BR	DE	FR	IT	UK	AT	Österreichische Republik
BR	BR	DE	FR	IT	UK	AT	Österreichische Republik
DE	DE	DE	FR	IT	UK	AT	Österreichische Republik
FR	FR	DE	FR	IT	UK	AT	Österreichische Republik
IT	IT	DE	FR	IT	UK	AT	Österreichische Republik
UK	BR	DE	FR	IT	UK	AT	Österreichische Republik
AT	BR	DE	FR	IT	UK	AT	Österreichische Republik
Österreichische Republik	BR	DE	FR	IT	UK	AT	Österreichische Republik

condition and $\alpha=.88$ in the audio condition; and fairly high inter-correlations (.67-.88) in the visual condition and $\alpha=.83$ in the audio condition.

Rational Judgments

Both types of reliability are dependent with regard to the assessment of the affective, general reactions toward interviews. Each of the seven variables was measured with a Likert scale. Internal consistency ranges from .88 to .91 in the visual eye condition and ranges from .86 to .89 in the audio eye condition (Table 4-5). Internal consistency reliability is calculated using the covariance between the two items measuring each construct and correcting it using the Spearman-Brown formula. Correlations between items in the audio conditions are in the first column with estimated reliability estimates in the second column. Correlations between items in the visual condition are in the third column with estimated reliability estimates in the last column.

Reliability of the seven variables from combining three two-item scales is shown in Table 4-6. This estimate is the uncorrected reliability of the 14 item scale adjusted by Spearman-Brown formula for three items.

TABLE 4-5
PERSONAL ADJUSTMENT INDEX-TIME CORRELATIONS AND
RELIABILITY ESTIMATES

	Initial condition		Final condition	
	Two items r: Reliability			
1. Confidence	.82	.80	.84	.79
2. Competence	.87	.83	.87	.86
3. Dominance	.88	.85	.88	.87
4. Help-giving	.84	.79	.76	.76
5. Likeability	.82	.85	.84	.79
6. Trust	.79	.78	.77	.77
7. Reciprocity	.85	.83	.78	.77

Internal consistency reliability adjusted by Spearman-Brown formula. All correlations significant at $p < .05$.

TABLE 4-1
PERSONAL ADVICE ITEM RELIABILITY

	<u>Visual cue only</u>	<u>Cross-cue Radio-Cue Dials</u>
Personal Reactions Index	.83	.90
Intercoder reliability adjusted by Spearman-Brown formula for 8 raters, 20 items per rating, $n = 130$		

The reliability correlations for the five items of each interview, summed by the Spearman-Brown formula, yielded reliability estimates from .48 for Reliability to .78 for Competence in the visual cue condition. In the audio cue condition, the reliability estimates range from .45 for Reliability to .74 for Competence (Table 4-2).

When the personal reactions are combined in an index, very high reliability is observed ($\alpha = .93$ for the visual condition and $\alpha = .90$ for the audio condition). Therefore, an index can be used to represent overall perceived reactions to the message from the subscriber's point of view.

Relationships between cues and interview judgments

The first set of hypotheses predict a positive relationship between visual cues and interview ratings, and

TABLE I-7
INTERCLAS CORRELATIONS FOR PERSONAL INJECTION Variables

	Condition	
	Visual Case Only	Audio Case Only
Conscientiousness	.78	.78
Diligence	.71	.81
Decisiveness	.78	.79
Reliability	.71	.69
Liability	.70	.65
Proactive Behavior	.79	.71
Trustworthiness	.66	.62
Personal Selection Index	.63	.73

Interviewer reliability adjusted by speaker-trait scale (see Table 1-8 values).

visual case and job performance ratings. For visual cases and interview ratings, the correlation is .71 ($p < .001$) and for visual cases and job performance ratings, the correlation is .74 ($p = .001$) (Table 4-6). These relationships show that visual cues are taken into account when determining interview ratings and job performance ratings.

The next hypothesis predicts that there would be positive relationships between audio case and interview ratings and audio case and job performance ratings. For

audio cues and depressive ratings, the correlation is .32 ($p = .02$) and for audio cues and job performance ratings, the correlation is .30 ($p < .02$) (Table 4-1). These relationships reveal the same information as the visual cues: audio cues are taken into account when determining depressive feelings and job performance ratings.

Hypotheses 1a and 1b predict a positive relationship between perceived exertions and visual cues and audio cues respectively. These two were supported, robustly for visual cues ($r = .59$, $p < .00$) and also for audio cues ($r = .30$, $p = .001$) (Table 4-1). Considering the subjects were subjected to only one channel of information to make their ratings, these findings show that people *trust* in a perceptual way to the kind of specific external cue usage of others.

Similarly, positive relationships between the cues and personality attributions were expected. For visual cues, all those organizationally relevant top 5 traits are significantly related (extraversion: $r = .49$, $p < .000$; conscientiousness: $r = .29$, $p < .05$; agreeableness: $r = .15$, $p = .001$). For audio cues, however, only extraversion was significant ($r = .26$, $p < .05$). Conscientiousness had a correlation of $.12$ ($p = 1$) and agreeableness a correlation of

TABLE 4-8
COMMUNICATION BY CONDITION

B) Audio Condition	Average Score	Intercoder Reliability	Performance Reliability
Audible Case	---	.32*	.33*
Perceived Reactions	.35*	.41*	.31*
Agreement measure	-.04	-.06	-.06
Consensus measure	.18	.40*	.09
Discrepancy	-.21*	-.30*	-.23*

C) Visual Condition	Visual Case	Intercoder Reliability	Performance Reliability
Visible Case	---	.31*	.34*
Perceived Reactions	.31*	.30*	.33*
Agreement measure	.18*	.01	.07
Consensus measure	.14*	.36*	.13
Discrepancy	-.03*	-.09	-.03

n = 138

* p < .05; * p = .048; ** p = .004

-.02 (see Table 4-8). These personality traits can be more easily attributed with the use of visual cues, except the trait of extraversion, which can be attributed by using either channel of information.

Research Note: Testimony Evaluation

The relationships established above can now be tested with the theoretical model given in Figure 3-1. Following Baron and Kenny (1986), this mediation model is tested in three steps. First, there must be a significant relationship between the independent variable and the dependent variable. Second, there will be a significant relationship between the mediator and the dependent variable. Finally, when the combined effects of the mediator and the dependent variable are measured in a linear regression equation, the mediator term will be statistically significant and the independent variable must have a lower relationship with the dependent variable than when examined individually. Perfect mediation entails that the relationship between the independent and the dependent variable is fully accounted for when the mediator is introduced into the equation in step 3.

Hypothesis 3 predicts the mediation effects seen in Figure 3-1 on the relationship between visual cues and interview ratings. Table 4-9 shows that when the combined effects of personal reactions on the mediator and visual

view as the independent variable are examined on interview ratings (H3a), the mediator is significant and the independent variable is driven toward zero ($B_{11} = -.02$, $p < .05$; $B_{12} = .09$, $p > .05$). Personal reactions strongly mediate the relationship between visual cues and interview settings, given the nonsignificant relationship of the visual cues on the dependent variable when the mediator is added to the equation.

Hypothesis H3b was not supported (table 4-8). The mediated relationships are not significant on the syndrome-specific regression equation ($B_{21} = .21$, $p > .05$; $B_{22} = .21$, $p > .05$). It was predicted that consciousness would mediate the visual cue - interview rating relationship, and it was expected that $B_{21} = .21$, $p < .05$; $B_{22} = -.16$, $p < .05$. Finally, H3d was not supported. Apprehension-addiction scale cues on the visual channel do not mediate the relationship between visual cues and interview settings ($B_{31} = -.03$, $p > .05$; $B_{32} = .03$, $p > .05$).

The next set of hypotheses test the model from the audio cue side (see table 4-10). First, personal reactions to the speaker derived from the audio channel mediate the

TABLE 4-II
ESTIMATION RESULTS FOR VARIOUS TYPES AND INTERVIEW SITUATIONS
USING COEFFICIENTS FROM COEFFICIENTS

Dependent Variable	Model	Testing	
		ES	SE
ES: Individual effects	---		.213*
VC: Individual effects	ESP		---
ES: Combined effects	.21*		.08
	ES		.32
ES: Individual effects	---		.203*
VC: Individual effects	SCP		---
ES: Combined effects	.49		.07*
	ESB		.32
ES: Individual effects	---		.12*
VC: Individual effects	.34*		---
ES: Combined effects	.29*		.14
	ES		.32
ES: Individual effects	---		.29*
VC: Individual effects	.15		---
ES: Combined effects	-.03		.01*

*p < .05. VC = VARIANCE COVARIANCE; AC = AUTOCORRELATION; SE = STANDARD ERROR; ES = ESTIMATED SITUATION; B = BIAS; SCP = COEFFICIENTS OF CORRELATION; B2 = BIAS OF ESTIMATES.

radio use - interview rating relationship to control the $B_{11} = .24$, $p < .05$; $B_{12} = .25$, $p < .05$). That, the way one deals effectively toward a manager, gives atop radio use information about the manager, partially explains the relationship between radio use and interview ratings.

Finally, conscientiousness mediates this relationship ($B_{11} = .28$, $p < .05$; $B_{12} = .29$, $p < .05$). The degree to which a manager is attributed the trait conscientiousness is a causal link between radio use and interview ratings—conscientiousness also was found to mediate the radio use and interview rating relationship ($B_{11} = .23$, $p < .05$; $B_{12} = -.07$, $p < .05$). This is the one instance in this study, however, where the individual effects of the mediator are not significantly related to the uses, but still mediate the relationship in the combined effects model.

Testing for reversability as a mediator did not pass the conditions set out in step 2, i.e., the relationship between reversability and radio use was not significant. More though, reversability was not significant in the combined effects model, and thus, cannot be a mediator ($B_{11} = -.06$, ns; $B_{12} = .13$, $p < .05$).

To this point, the analyses discussed have tested the mediation effects on both types of user and interview ratings. These mediator analyses are repeated with job performance ratings as the dependent variable. First,

TABLE 4-13
REGRESSION RESULTS FOR STUDY CUES AND INTERVIEW RATING
PREDICTABLES REGARDING COEFFICIENTS

Dependent Variable	Hodson	Index Variable
	.28	.42
SI: Individual effects	---	.13**
SC: Individual effects	.29*	---
SI: Combined effects	.34*	.25*
	.28	.42
SI: Individual effects	---	.13**
SC: Individual effects	.31*	---
SI: Combined effects	.39*	.26*
	.28	.42
SI: Individual effects	---	.13**
SC: Individual effects	.17	---
SI: Combined effects	.29*	.27**
	.28	.42
SI: Individual effects	---	.13**
SC: Individual effects	-.07	---
SI: Combined effects	-.08	.13**

*.05 < P < .10 **.01 < P < .05. SC = Study Cues; SI = Interview Selections; IR = Interview Ratings; RI = Relationship Index; CUE = Cues; IND = Individual.

hypothesis set #2 assesses the moderating effects on the visual cue - job performance relationship. Table 4-11 provides evidence that none of the hypothesized are supported involving the visual cue - job performance rating relationship.

For the audio cue - job performance hypotheses, only one held true (Table 4-12). The relationship between job performance ratings and audio cues can be partially explained by personal reactions ($\beta_{11} = .23$, $p < .05$; $\beta_{12} = .16$, ns). None of the other hypotheses were supported. This completes the analyses from Part One of the study.

Research Model Readings-Each Day

In the first section of Part Two of the study, the effects of perceptual cues on the intrinsic validity and audio cue constructs are partially the unscripted cause of the validity coefficient for the interview ratings and job performance. Both hypotheses were supported to no extent, though audio cues explain more of the variance in the validity coefficient in this study (Table 4-13). Though the validity coefficient only drops -.03 from the zero order to first order correlations, this corresponds to an 11% drop in variance accounted for by visual cues. However, when the effects of audio cues are partialled out of the

**REGRESSION RESULTS FOR STRESS, CUES AND JOB PERFORMANCE
STANDARDIZED REGRESSION COEFFICIENTS**

Dep. Variable	Mediated	Unadj. VARIABLES
	EE	EE
PERF: individual effects	---	.18
VC: individual effects	-.03*	---
PERF: Combined effects	-.01	.19
	ES	ES
PERF: Individual effects	.00	.14
VC: Individual effects	-.05*	---
PERF: Combined effects	.02	.13
	CS	CS
PERF: Individual effects		.14
VC: Individual effects	-.01*	---
PERF: Combined effects	.03	.13
	AS	AS
PERF: Individual effects	.00	.14
VC: Individual effects	-.13	---
PERF: Combined effects	-.10	.16

* p < .05. VC = visual cues; EE = emotional exhaustion;
 PERF = job performance; Rel. Env. = Relationship;
 CS = concurrent outcomes; AS = agreeableness.

TABLE 4-2
REGRESSION RESULTS FOR PEGCO CCR AND O&G PERFORMANCE
REGARDING PREDICTOR COEFFICIENTS

Dep. Variable	Mediation	Index Variable
	.28	AG
PEGC: individual effects		.20*
AG: Individual effects	.20*	---
PEGC: Combined effects	.23*	.10
	.28	AG
PEGC: Individual effects	---	.20*
AG: Individual effects	.21*	---
PEGC: Combined effects	.11	.16
	.00*	AG
PEGC: Individual effects	---	.20*
AG: Individual effects	.08	---
PEGC: Combined effects	.08	.10*
	.28	AG
PEGC: Individual effects	---	.20*
AG: Individual effects	-.07	---
PEGC: Combined effects	-.07	.10*

* p < .05; AG = public power; PEGC = financial transaction;

PEGC = utility performance; AGC = utility revenue;

CGC = concurrent low income; AG = dependency.

TABLE 4-13
ZERO AND FIRST ORDER CORRELATIONS BETWEEN INTERVIEW RATINGS
AND PERFORMANCE RATINGS

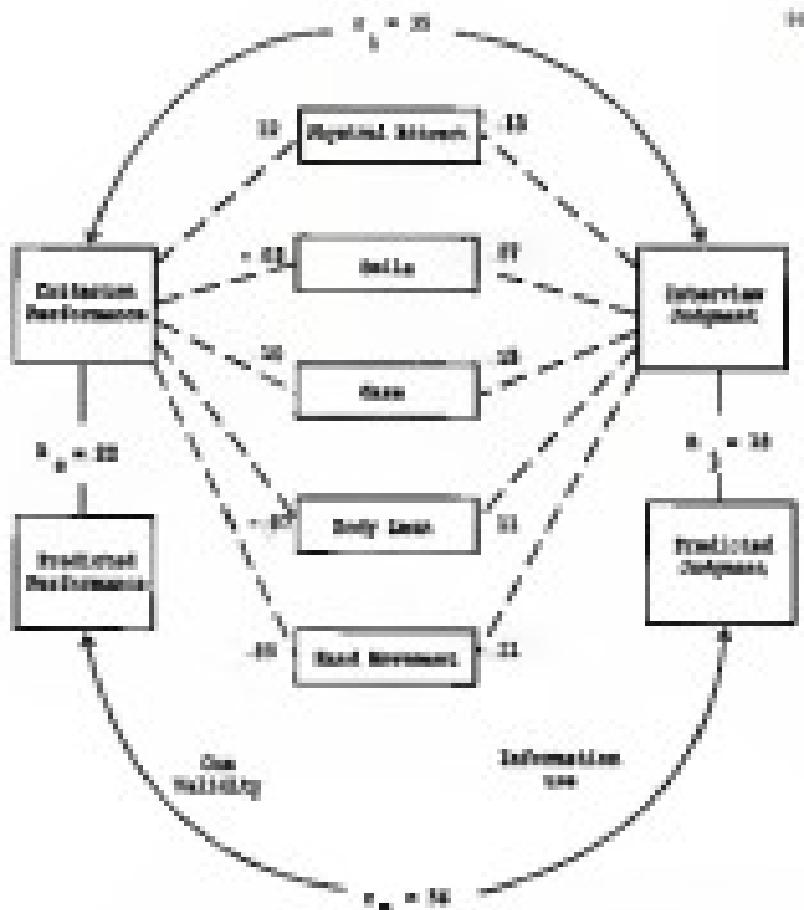
	Performance Ratings		
	<i>r</i>	<i>R</i>	Var. Explan. Prediction (%)
Interview Ratings			
Zero Order	.39	.12	
First Order			
Favorable cue controlled	.38	.19	33%
Unfavorable cue controlled	.39	.20	37%
Both cues controlled	.34	.06	3%

Interview rating - job performance rating relationship. 37% of the variance is reduced. While both types of cue are partial causes of the relationship between interview ratings and job performance ratings, unfavorable cue account for more than favorable variance reduction when partialled out. Finally, controlling for both types of cue reduces the variance explained by 12%.

In the second section of Part Two, a structural equation model is used to assess the degree to which interview ratings and job performance ratings significantly are different.

interviews when making their ratings. To examine question 1, the unadjusted visual case was regressed on both job performance ratings and interview judgments. Predictions made by this regression model are added to variables and correlated to give the "matching index." The matching index is interpreted as the degree to which both sides of the model consistently use the information items. Figure 4-1 shows the results of this analysis. The matching index, or the correlated validity coefficient, comes .3996 as $r = .38$. This shows the modest job predictions of the interview judgments given only visual cues. It is interesting that the multiple correlation for the predictability of the criterion given only these visual cues ($R = .27$) is close to the validity coefficient ($r = .28$). A similar result is found in the interview versus side of the model ($R = .19$).

Figure 4-2 has the results for question 2 regarding audio cues. The matching index is much smaller here, $r = .29$, showing significant similarity of one side, but not as much as the visual case. In fact, this matching index is not even as high as the validity coefficient. One could argue that the combined usage of audio cues by both types of raters is suppressive the validity coefficient. However, similar to visual cues, the multiple correlation for the predictability of the criterion given audio cues ($R = .27$) is very close to the validity coefficient ($r = .28$ as in



r_s = criterion-related validity coefficient

r_m = matching value

R_{S} = multiple correlation for predictability of criterion

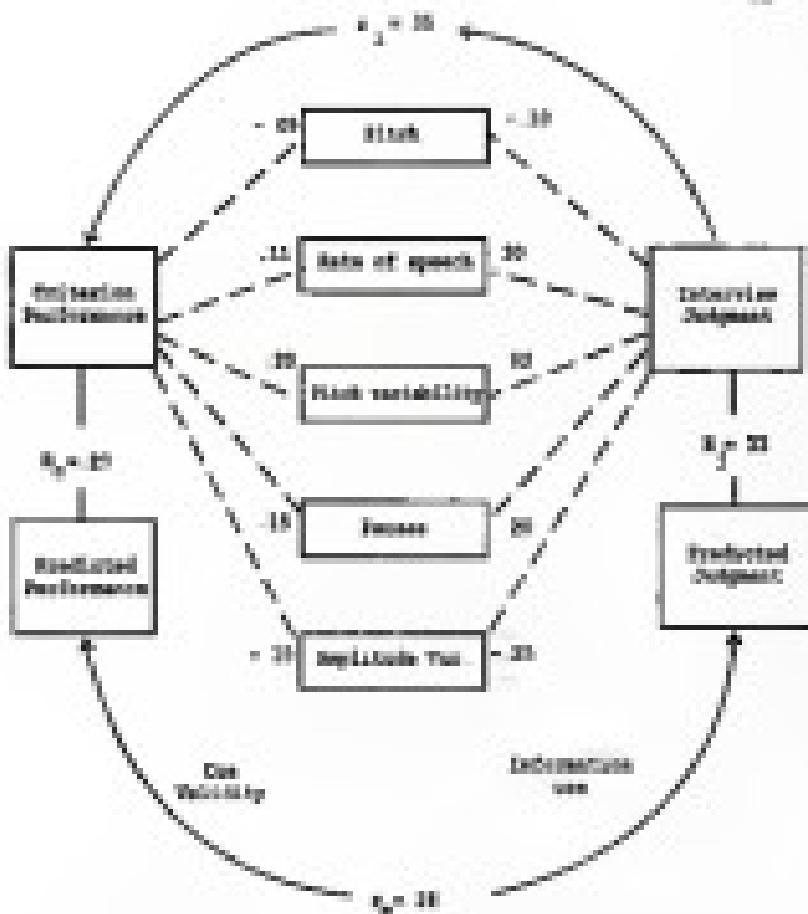
R_{D} = multiple regression for predictability of outputs

FIGURE 4-1.
VISUAL REPRESENTATION

the multiple correlations for the predictability of the interview judgments ($R = .39$).

Position 2 is examined in Figure 4-3. Since the personality attributions made from both channels unidimensionally are combined to reflect overall personality attributions, the matching index is very high ($I = .91$). This suggests that interview raters use job performance ratings almost equally use personality attributions when making their ratings. The multiple correlations indicate good predictability of both the criterion ($R = .39$) and interview judgments ($R = .34$) using personality attributions.

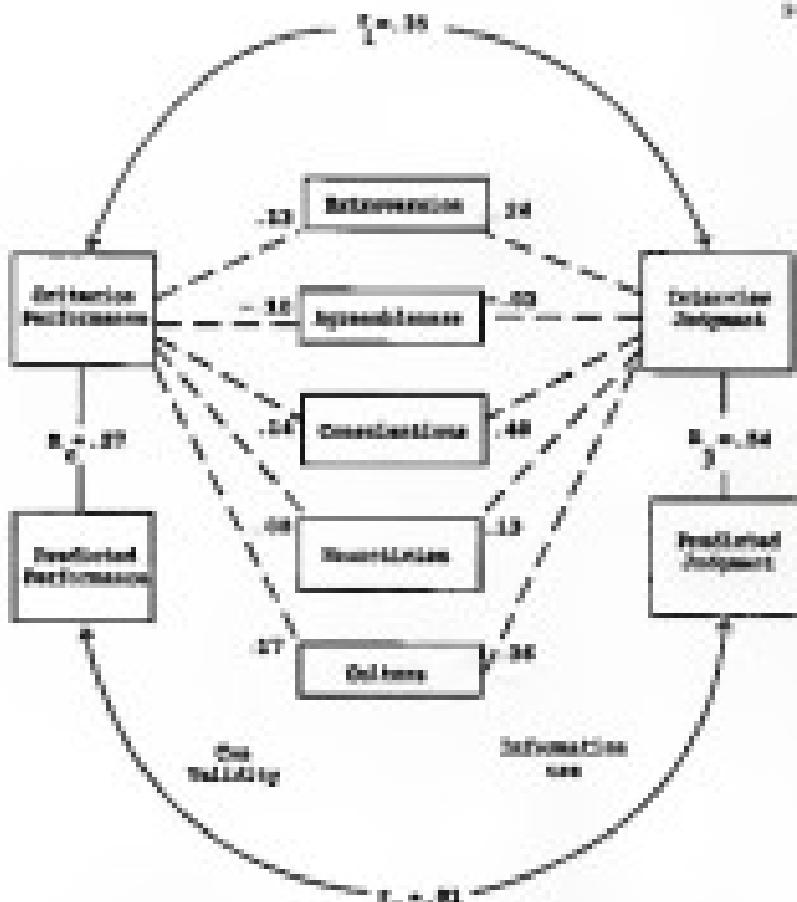
The last question is that the examine the use of personnel reactions by both types of raters. Figure 4-4 shows a consistently high matching index as for personality attributions ($I = .79$). Again, this indicates equal usage of personnel reactions when making different types of ratings. It also shows higher validity for the personnel reactions to personnel than for the criterion-related validity coefficient from the interview. Using personnel reactions to personnel, rater, job and gender job performance ($R = .36$) and interview judgments ($R = .46$) very well. The personnel reaction variables were combined from both channels as described above as personality attributions.



Rho_{ij} = multivariate related reliability
 β_{ij} = coefficient
 Rho_{ij} = switching index
 α =

Rho_{ij} = multiple correlation for predictability of criterion
 β_{ij} = multiple correlation for predictability of judgment

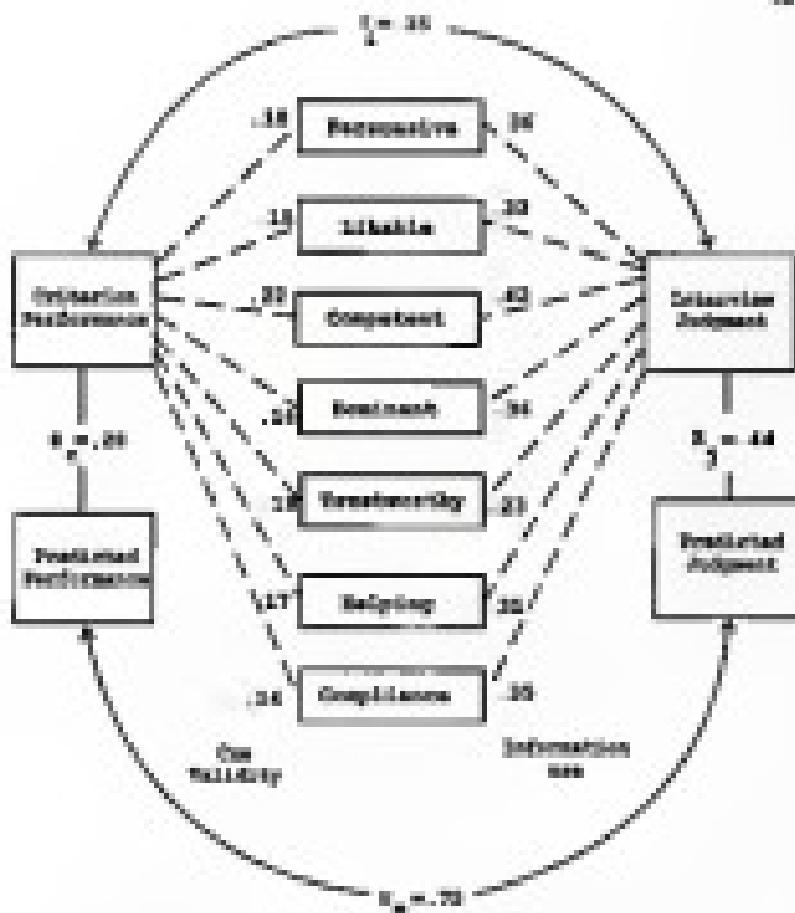
FIGURE 4-2
ANALYSIS HYPOTHETICAL DATA



β = criterion-related
 t = validity coefficient
 R = matching index
 α

β = Multiple correlation for
 t = predictability of outcome
 R = Multiple correlation for
 α = predictability of judgments

FIGURE 4-3
 PERSONALITY DIMENSIONS FROM
 BEHAVIORAL CUES



R_s = criterion-related validity coefficient
 R_s = reliability coefficient
 R_s = matching index

R_s = multiple correlation for predictability of selection
 R_s = multiple correlation for predictability of judgments

FIGURE 8-8
PERSONAL SELECTION FROM PROFESSIONAL SCORES

CHAPTER 4 DISCUSSION

This study provides evidence that there is a meaningful relationship between both visual and audio-
verbal cues, interview memorability, and job performance ratings. These relationships are shown to be mostly
mediated by personal reactions to the speaker, and to a
lesser extent, by personality attributes of the speaker.

Interview Memorability

In an interview, there is little time to get beyond all information at hand to derive subsequent inferences of
memorability. Thus, subjects are left to search for ways to
assess the cues using the behavioral information given in
the interview answers, but also other cues from both the
visual and audio channels.

The data presented in this study say that subordinate
react in a personal manner to the unverbal cues of
messages. When subordinates are exposed to only the visual
channel of information from their message, their personal
reactions to what they see act as the mediator through
which the cues cause interview memorability. In other
words, the correlation between visual cues and interview

ratings may not be attributable to stereotyping error if the affective orientation that listeners have toward the speaker indicates how one would react on the job. In this study, the listener was trained to be subordinate to the speaker, who was the manager. These results suggest that favorable ratings in the interview that are associated with visual cues would translate to the job where the subordinates would react more positively to the manager, giving higher levels of visual cues.

Conscientiousness also was found to mediate the relationship between visual cues and interview ratings. The correlation between visual cues and interview ratings can be explained when a manager is deemed responsible and dependable by a listener. This has even greater ramifications for firms since conscientiousness is a job-relevant construct (e.g., Barrick & Mount, 1991; Mount et al., 1996).

When listeners are exposed to only the audio channel of information of the speaker, their personal reactions partially mediate the relationship between audio cues and interview ratings. Though not as strong an effect as found with the visual cues, the way that one reacts to what is heard, without seeing the speaker, is a moderator for this linkage. This suggests that the way a speaker's voice sounds acts in a similar manner to how the speaker looks.

If this represents stereotyping, it has organizational relevance for effective performance. Similar to the visual cues, if a subordinate finds the manager's voice attractive, their subordinate ranks in a more positive affective manner to the manager. Stated another way, attractiveness evokes attachment to noble cues, making it reasonable to believe that people who possess noble cues will be more effective as a manager.

Relationship also was shown to be a critical link between noble cues and interview ratings. If attractiveness is attributed to the manager, that manager's noble cues reduce L1 and higher interview ratings variability. It was argued that in the interview, an experienced person is at a significant advantage to an inexperienced person because inexperienced managers are more driftily used when one is an amateur. From this study, it can now be argued that noble attractiveness is attributed solely from noble cues, more than can difficult to change. These attributions are indicating an inherent trait, not impression management factors.

Job Performance Ratings

This work also shows a significant correlation between verbal and noble nobility cues and job performance ratings with interview ratings, no separation was stereotyping, given no interviewee's elicited information - experience

management, is also an explanation for the relationship between supervisor cues and interview ratings. These explanations cannot hold for job performance ratings. Supervisors have access to much more information about the rater making the judges of stereotyping from limited information and the use of naive impression management in this rating setting does. It is a more complex task to explain supervisor cues moderating with job performance.

Results from this study show that personal characteristics and voice may be a mechanism for the subtle cueing performance rating bias. The relationship between higher manager ratings of job performance and their male cues causes subordinates to help them more, trust them more, comply with them more, and form overall higher affective personal reactions to the manager. Subordinates respond to male male cues more positively than others. A high-pitched voice, one that uses little variation in pitch, hesitates infrequently, does not vary the amplitude, and is more poised, is not associated with affectiveness. But since these cues cause subordinates to be more supportive of their managers, job performance of the manager increases. Essentially, this relates the journal entry that there may be bias in the performance domain.

Internal Validity

In this study, a significant amount of variance in the rating coefficient was explained by nonverbal cues, especially audio cues. When the variance from both types of cues are partitioned out together, half the variance explained is the reliability coefficient ($\alpha = .69$). That is, nonverbal cues explain half the variance in the interview validity. This suggests the cues below in the preference domain, if present, are associated with interview ratings and nonverbal cues can be aligned, making this suggestion might be more palatable—*provided*, if nonverbal cues belong in the job performance attribution domain, what would ultimately be suggested is to use nonverbal cues in organizational decisions.

The analysis from the structural tree model provides different information. The key idea of the model shows agreement on the usage of nonverbal cues, personal reactions, and personality attributions. To the extent of the varying starting factors from the structural tree model analysis, there is evidence that these different constructs are utilized when assessing the performance of others. This finding more broadly affords a partial relevance to the notion that nonverbal cues are error in interview judgments. If the cues are used similarly in job performance rating attributions, where the error be not attributed to the source

suggested in interviews, there is further support for the notion that the two facets underlying traits that are important on the job.

Conclusion

The effects of manager's overall ease on their job performance ratings and interview ratings may be explained in a couple of ways. Perhaps there are shared biases from supervisor to interview rated. These could be things that society values or holds biases toward. An example concerns decisions about political candidates. Research has shown these decisions often are made on the basis of appearance as a "guaranteed" reliable thing (Brennan, 1992).

Another interpretation is that the ease are behavioral manifestations of underlying traits. The results from this study lean toward this conclusion. Interviewees may have stereotyping and impression management, but job performance ratings should not. The degree of visibility usage of the ease alone they are revealing something other than stereotyping and impression management. Job performance ratings have only one explanation from this study: personnel reactions from rating ease. There is room for more research here—Limitations to this study can be overcome with replication and expansion of the research tool used in this study. It could contain other mechanisms through which the

relationship between normative cues, interview preparedness, and job performance ratings can be examined.

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APPENDIX A

The following two pages contain the six behavioral or anchored scales used by both the interviewers and the supervisors.

LEADERSHIP

Leading organizations are leadership-directed and guiding members toward the accomplishment of goals by motivating and inspiring their performance. Instead of persistently seeking to control and direct, leaders facilitate confidence in others through building their belief in them.

Insight into selected behaviors

	<ul style="list-style-type: none"> ■ Seeks or volunteers for leadership roles in groups.
1	<ul style="list-style-type: none"> ■ Provides positive and constructive feedback to others permitting no negative contributions.
2	<ul style="list-style-type: none"> ■ Considerately accomplishes goals through others.
3	<ul style="list-style-type: none"> ■ Considerately and directly persuades others to accept one's views and ideas.
4	<ul style="list-style-type: none"> ■ Fails to accomplish goals and projects in timely fashion often.
5	<ul style="list-style-type: none"> ■ Attempts to motivate others by providing feedback and encouragement.
6	<ul style="list-style-type: none"> ■ May recognize, but not always take advantage of opportunities to accomplish tasks through others.
7	<ul style="list-style-type: none"> ■ Argues one's own ideas and views to others and attempts to persuade others to accept the same viewpoints.
8	<ul style="list-style-type: none"> ■ Seeks or creates opportunities for leadership.
9	<ul style="list-style-type: none"> ■ Does not believe in members' ability to meet their assigned tasks competently, or gives feedback to others about performance.
10	<ul style="list-style-type: none"> ■ Does not utilize opportunities to accomplish goals through others.
11	<ul style="list-style-type: none"> ■ Does not try to express one's views and opinions in effective ways.

INNOVATIVE DESIGN SOURCES

Adopting a methodical and systematic approach for solving all aspects of a problem yields optimum solutions by clearly anticipating alternative and developing plans to meet them, applying sound decision-making processes to overcome obstacles, managing the resources in such a way that prevents wasting time, energy, and manpower, and continuously improving field methods and advancing from empirical solutions.

Generation of substituted solutions

- 1. **Basic principles, underlying theories, and generalizable plans in innovative methodologies**
 - 2. **Use all the time available to search for relevant information and form alternative solutions**
 - 3. **Work as hard as necessary to propose more efficient and challenging solutions to the task at hand**
 - 4. **Focus should be kept on the "why" and "how" rather than "what" and "when" as they arise**
 - 5. **Take advantage of existing evidence pertaining to propose a solution**
- MONITORING:**
- 1. **Assume no more than one with reasonable assurance for quality, but may become price-oriented by prioritizing by outcome**
 - 2. **Have types of errors to critique situations, yet provide efficient monitoring**
- 3. **Review daily, anticipate deviation without waiting for problems, planning ahead, or anticipating obstacles****
- 4. **Identify key information and minor important details****
- 5. **FOCUS/REDUCE, EXPAND, MODIFY, or ADAPT FOR BETTER PERFORMANCE****
- 6. **Take corrective and next control by sequential elimination****

INTERVIEWER: INVESTIGATOR

An interviewing role that questions and clarifies, negotiating with suspect policies and rules over their perceivedly incorrect, unsafe, unnecessary, obligations, and positions of others. **INTERVIEWER AND INVESTIGATOR TEND TO HOPEFULLY DISAGREEABLELY DEDUCE** without raising concern or becoming defensive.

INTERVIEWER AS INVESTIGATOR

- Initially unapologetic over actions and acts. Reluctantly to answer, then can minimize their impact on others.
 - **INTERVIEWER** defuses with the letter of the spirit of company policies and rules.
 - **INTERVIEWER** displays sensitivity, intelligence, and position of others.
 - Supposedly defends own generalized position despite viewing objections from others.
-
- Admittedly can collaborate with accused, but reluctantly.
 - Tries to focus at least one issue of company policies and rules.
-
- **INTERVIEWER** may compromise, oblige others, and position to others, but sometimes resists.
 - **INTERVIEWER** may prioritize position, but may have more to avoid confrontation than others imagine.
-
- **INTERVIEWER** defuses by criticizing and refuting responsibility for mistakes.
 - **INTERVIEWER** stepping policies and rules only after investigation.
-
- **INTERVIEWER** issues consequences, and judgments, by **INTERVIEWER** tends to others whom he deems to be less intelligent.
 - **INTERVIEWER** does not suppose consequences when others respond in positive, different from own prioritized position.
-

STRUCTURE FOR CRISIS

Successful outcomes for clients' problems, although somewhat brief and rarely appreciated, are generally the result of various factors including: client confidentiality; making the client feel understood, liked and supported; and accepting them during interaction with others; appreciating and developing perspectives from across larger organizational domains.

Barriers to effective interaction

- 1. **■ Seeks for opportunities to help others and actively facilitates problem resolution to take place.**
 - 2. **■ Client feels he or she is incompatible with others and considers their feelings and opinions.**
 - 3. **■ Enjoys creative solutions and ways to resolve conflicts or disagreements with others.**
 - 4. **■ Asks others for ideas and accepts them when appropriate.**
-
- 1. **■ Helps others willingly when asked.**
 - 2. **■ Encourages other's approach to discuss their feelings or potential answers.**
-
- 1. **■ Accepts alternative solutions and actions by others as feasible possibilities.**
 - 2. **■ Likes to "listen" to others when addressed.**
-
- 1. **■ Shows enthusiasm and motivation when asked to complete personal assignments to help others.**
 - 2. **■ Shows little enthusiasm or concern for how our actions are likely to affect others.**
 - 3. **■ Appreciates realistic solutions by refusing to compromise away what is necessary to proceed with the task.**
-
- **■ Accepts or rejects others' ideas.**
-

Markets Survey

Taking steps to "please their customers". Different and extensive forms and mechanisms. Function with effort to develop products and related services that will satisfy customers' needs and preferences, going out of the way to satisfy customers' special requests. Building confidence with respect, tact, and professional courtesy at all times.

Description of exhibited behavior

- 1. **Focuses on customer satisfaction.**
 - Takes initiative to approach customers, ask questions, and fully understand their needs.
 - 2. **Focuses specifically on customer satisfaction without sacrificing technical quality.**
 - Focuses**
 - Focuses primarily on services as much as possible in the unique nature of different customers.
 - Looks for opportunities to give customers the best service possible and satisfy special requests, even those potentially inconvenient.
 - Works with customers everyday to make sure their needs are being met.
 - 3. **Focuses on technical quality, but also keeps customer satisfaction in mind.**
 - 1. **Develops products and services to meet the needs of most customers.**
 - Takes up most customers' special requests and of course will accommodate them.
 - 2. **Focuses on technical quality and ignores customer satisfaction.**
 - Focuses on finding new approaches to explain their needs, but frequently ignores them.
 - Mix**
 - Provides general products and services without discriminating the unique needs of different customers.
 - 3. **Refuses to try to satisfy customers' special requests if potentially inconvenient.**
-

INSTITUTIONAL DIVERSITY

Diversifying and accepting people with diverse backgrounds and cultural orientations, integrating company goals with respect to employee diversity, showing care and sensitivity to relations with people from diverse backgrounds and cultures.

Implementation of sustained diversity:

- 1. **Integrate diversity in their work and communication**
 - diverse perspectives of people with diverse ethnic or cultural backgrounds
- 2. **Integrate diversity through company goals to promote diversity**
 - Explain advantages of employee diversity in culture and encourage others to promote diversity
 - Institutionalically embrace people with diverse ethnic or cultural backgrounds
- 3. **Adjust the differences in perspective when dealing with people with diverse ethnic or cultural backgrounds**
 - Consider within company goals to promote diversity
- 4. **Acceptance**
 - Encourage others to do what they believe that it is the company's policy to promote diversity
 - Accept people regardless of the U.S. ethnic or cultural background
- 5. **Share values to promote diversity**
 - Express personal differences in perspective when dealing with people with diverse ethnic or cultural backgrounds
 - Show tolerance to promote diversity
- 6. **Agree with others what they agree with others to promote diversity**
 - Agree to accept people with diverse ethnic or cultural backgrounds

APPENDIX B
VERBAL MATERIALS FOR ACTIVE VOLLEY
SOCIOECONOMIC INFORMATION QUESTIONNAIRE

AGE: _____

EDUCATION: _____

- | FULL-TIME HOME OCCUPATION | PART-TIME HOME OCCUPATION |
|--|--|
| <input type="checkbox"/> none | <input checked="" type="checkbox"/> none |
| <input type="checkbox"/> up to six months | <input type="checkbox"/> up to six months |
| <input type="checkbox"/> 6-12 months | <input type="checkbox"/> 6-12 months |
| <input type="checkbox"/> 1-2 years | <input type="checkbox"/> 1-2 years |
| <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 3-5 years |
| <input type="checkbox"/> more than 5 years | <input type="checkbox"/> more than 5 years |

NAME TWO OTHER HOME OCCUPATIONS FOR A DAY:

- no
- yes, 1 to 2 hours
- yes, 3 to 6 hours
- yes, more than 6 hours

G.P.A.: _____

i. How much did this person smile in the interview?

1	2	3	4	5	6	7
never smiled		smiled a little			smiled a lot	

j. The degree of approach or perceived attractiveness of this person is:

1	2	3	4	5	6	7
very unattractive		average attractiveness			very attractive	

k. How much did this person move his/her hands while talking?

1	2	3	4	5	6	7
never moved hands		slight hand movement			constantly moved hands	

l. The degree that this person looked directly at the interviewer while talking is:

1	2	3	4	5	6	7
never looked at interviewer		half the time			mostly looked at interviewer	

m. How did this person position him/herself in the interview?

1	2	3	4	5	6	7
located away from interviewer		not located within area			located toward the interviewer	

APPENDIX C
ANALYSIS OF VARIANCE

Sample Size: 100 cases
 Number Errors: 1000
 Sampling Rate: 10000
 Total Errors: 0.0000 sec
 Total Time: 0.0000 sec

Average Fundamental Frequency	To = 120.000 Hz
Average Pitch Period	To = 7.273 ms
Highest Fundamental Frequency	To = 179.260 Hz
Lowest Fundamental Frequency	To = 60.620 Hz
Harmonic Oscillation of the	MSD = 14.000 Hz
Phenomenon Periods in msec	HP = 1.0
Length of Analyzed Sample	Time = 0.000 s
Standard Errors	SD = 0.000 ms
Number Errors	SD = 0.000 s
Relative Average Fundamental	MSD = 0.200 s
Root Variance (standard deviation)	HP = 0.000 s
Standard Error Errors (standard deviation)	SD = 0.000 s
Fundamental Frequency Variation	MSD = 0.000 s
Harmonics SD MS	SD = 0.000 s
Harmonics Period	SD = 0.000 s
Amplitude Perturbation Content	MSD = 0.000 s
Decibel Avg. Period. Duration	SD = 0.000 s
Post-Harmonic Variation	SD = 0.000 s
Degree of Pulse Errors	SD = 0.000 s
Degree of Sub-harmonics	SD = 0.000 s
Degree of Transients	SD = 0.000 s
Number of Pulse Errors	SD = 0.000 s
Number of Sub-harmonics	SD = 0.000 s
Number of Transients	SD = 0.000 s
Total Pulse Periods Standard	SD = 0.000 s

APPENDIX D
PERSONALITY ATTRIBUTION SCALES

Adjectives describing personality traits appear on the left side of this page and their opposites appear on the right with a 7-point scale midway between them. Please describe your impressions of the previous person by circling one number for each pair of opposite adjectives.

(Please be directly below no verbal expression, but it is on the next page here due to scanning problems.)

1.	Unfinished	1	1	3	0	0	0	+	Stalemate
2.	Not Structured	1	2	3	0	0	0	+	Stalemate
3.	Unstructured	1	3	3	0	0	0	+	Stalemate
4.	Opinions	1	4	3	0	0	0	+	Opinion
5.	Anti-Intelligent Intelligence Test	1	5	3	0	0	0	+	Anti-Intelligence Intelligence
6.	Intelligent	1	6	3	0	0	0	+	Intelligent
7.	Superstitious	1	7	3	0	0	0	+	Superstitious
8.	Intelligent, Stale	1	8	3	0	0	0	+	Superstitious
9.	Intelligent, Stale	1	9	3	0	0	0	+	Superstitious
10.	Intelligent, Superstitious	1	10	3	0	0	0	+	Stalemate
11.	Friendly, Open	1	11	3	0	0	0	+	Stalemate
12.	Intelligent	1	12	3	0	0	0	+	Stalemate
13.	Curious	1	13	3	0	0	0	+	Friendly, Witty
14.	Aggressively Smart	1	14	3	0	0	0	+	Smart
Opportunities									
15.	Cute, Sensitive	1	15	3	0	0	0	+	Sensitive
16.	Receptive	1	16	3	0	0	0	+	Receptive
17.	Entertaining	1	17	3	0	0	0	+	Entertaining
18.	Charismatic	1	18	3	0	0	0	+	Charismatic
19.	Reactive, Funny	1	19	3	0	0	0	+	Funny
20.	Simple, Smart	1	20	3	0	0	0	+	Simple

APPENDIX E
POLAROID REACTION SCALE

1. How threatening do you find this person (to your safety)?

0 = not threatening 1 = neutral 2 = threatening 3 = very threatening

2. The degree that you would comply with what this person asked you to do (if asked):

0 = never comply 1 = neutral 2 = sometimes comply 3 = always comply

3. How much do you think you would like this person?

0 = extremely dislike 1 = neutral 2 = extremely like

4. The degree to which this person would intimidate me to do things I don't want to do:

0 = never 1 = neutral 2 = will do this 3 = always

5. How much would you help this person in the future?

0 = never help 1 = neutral 2 = always help

6. I think this person's level of dangerousness:

0 = not at all dangerous 1 = neutral 2 = extremely dangerous

7. I think the level of this person's competence is:

0 = incompetent 1 = neutral 2 = extremely competent

POLAROID REACTION SCALE (continued)

8. If this person was up here, I would feel terrible very quickly.

0 = strongly disagree 1 = neutral 2 = strongly agree

APPENDIX C

Hector David Jansson was born February 14, 1960, in
Västerås, Sweden, Sweden. He worked in retail for many two years
before returning to school to complete his B.S. in Finance at
Florida State University in 1988. He also received his M.B.A. in
Management at Florida State University in 1990. He has been
married to Barbara Ann 21 years. Together, they have four
children: Alfred, Sophie, Kristoffer, and Helene. He has accepted
an associate professor position at Georgetown University in Washington,
D.C.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


 Dr. John C. Dugan
 Associate Professor, Chairman
 Department of Management

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


 Harry T. Coyle
 Professor of Management

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


 Dr. Michael E. Johnson
 Associate Professor of Management
 The Florida State University

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


 Dr. Robert W. Kacmar
 Professor of Foundations of Management